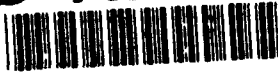


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**Development of a Total Quality Management Plan
for the National Naval Medical Center**

Graduate Management Project

Submitted to Faculty of

Baylor University

In Partial Fulfillment of the

Requirements for the Degree

of

Master in Health Administration

by

LT Richard P. Beaudoin MSC, USN

July 1991

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Abstract

The demand on organizations to provide higher quality products and services at lower cost is causing industry in America to change from traditional forms of management to the philosophies and principles of Total Quality Management (TQM). The Federal Government is not exempt from this demand, and all agencies are adopting TQM philosophies of one type or another. In 1990, the Department of the Navy directed the Navy Medical Department to embrace TQM, but provided very little specific guidance for implementation. This lack of guidance spawned this research project to support the transition to TQM at the National Naval Medical Center (NNMC), Bethesda, MD.

The purpose of this project is to propose a plan which will assist the senior managers of NNMC to incorporate the philosophies of TQM into the culture and daily operations of the NNMC. This research includes an organizational assessment of NNMC, an evaluation of methodologies for implementing TQM into healthcare organizations, evaluation of the Department of Defense TQM programs, and a comprehensive plan intended to provide guidance to the senior managers of the NNMC during the organization's transition. The plan will provide an implementation strategy, and will identify related costs, training requirements, and organizational changes needed to implement TQM.

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**Development of a Total Quality Management Plan
for the National Naval Medical Center**

Introduction

The objective of this Graduate Management Project is to develop an executable plan which will incorporate the principles of Total Quality Management (TQM) into the culture and daily operations of the National Naval Medical Center (NNMC) Bethesda, Maryland. The project will provide managers with a strategic implementation plan which will result in the delivery of higher quality, lower cost services. The plan will consist of a Plan of Action and Milestones (POA&M), a preliminary analysis for the cost of implementation, a list of potential areas for initial targeting during implementation, and the identification of organizational changes which would facilitate acceptance of TQM. The plan will incorporate requirements and regulations which are imposed on NNMC by the Joint Commission for Accreditation of Healthcare Organizations (JCAHO), Bureau of Medicine and Surgery (BUMED), and other organizations.

Conditions which prompted the Study.

There is currently a metamorphosis of management philosophy in American industry. No longer are the products and services of American workers considered to

be exceptional in quality by the consumers of the world. Managers are finally realizing that to survive in the competitive, cost-conscious, consumer-oriented international market place, a change in how Americans manage and work is required. To meet this challenge, a new management philosophy, commonly known as TQM, is permeating all levels of the public and private sectors.

The Department of the Navy (DON), complying with Department of Defense (DOD) instructions, is incorporating the principles of TQM into the culture of the Navy. A TQM implementation plan designed to integrate the new philosophy into the existing Navy hierarchy, has been promulgated by the Secretary of the Navy (Garrett, 1988). Secretary Garrett realized the magnitude of such a project and as a result, his plan phases various programs into the TQM movement on a four-year schedule. He directed all medical and dental facilities to begin implementation of TQM in 1990.

Garrett's directive prompted action at BUMED and various Naval Medical Treatment Facilities (MTF's). However, little research or guidance was available to direct the integration of TQM philosophies into the unique structure of the National Naval Medical Center (NNMC). This lack of guidance, coupled with 1) a desire

for improving services to beneficiaries, 2) the threat of reduced resources, and 3) the need to comply with the directives of higher authority, supported the need for this research. This project is intended to identify how the philosophies of TQM can be incorporated into the operations of National Naval Medical Center.

Statement of the Management Problem

The problem of this study is to determine what actions must be taken by the leadership of the NNMC so that the philosophies of TQM can be incorporated into the culture and operation of the organization.

Literature Review

The literature review was designed to 1) review the development and principles of TQM, 2) determine the culture and organizational structure of NNMC, 3) identify the key concepts required to incorporate the principles of TQM into the daily operations of NNMC, and 4) identify implementation methodologies used in the healthcare industry and DOD.

Total Quality Management.

Total Quality Management is a management philosophy based on the principle that continuous improvement in the

quality of a product or service will reduce wasted resources. The resources saved by reducing waste, loss, rework and underproduction can be used to produce more products or services of a high quality. Traditional programs to improve quality or productivity have focused on inspection and rejection of defective components or services and have placed little emphasis on preventing the defect (Deming, 1986).

Traditionally, healthcare quality programs have focused on the outcome oriented Quality Assurance (QA) program under the auspices of JCAHO. By concentrating on clinical outcomes the QA program fails to include all of the services provided to the internal and external customers of the organization. This limited focus places insufficient emphasis on both the consumer and the complete services provided by the organization.

TQM is known by several names including Quality Improvement (QI), Quality Management (QM), Statistical Process Control (SPC), Productivity Enhancement Program (PIP), Total Quality Control (TQC), and Quality Management (QM). Definitions of TQM also vary considerably. Alan Medelowitz (1990), Director of the Government Accounting Office (GAO), Office for International Trade and Finance, testified before

Congress that "there is no one formal definition of what constitutes a comprehensive Quality Management System." (p. 2).

The Federal Quality Institute defines TQM as "a strategic, comprehensive management system for achieving customer satisfaction which involves all managers and employees and uses quantitative methods to continuously improve an organization's processes." (Amdur, 1989). The Department of Defense (DOD, 1990) espouses the following definition:

Total Quality Management (TQM) is both a philosophy and a set of guiding principles that represent the foundation of a continuously improving organization. TQM is the application of quantitative methods and human resources to improve the material and services supplied to an organization, all the processes within an organization, and the degree to which the needs of the customer are met, now and in the future. TQM integrates fundamental management techniques, existing improvement efforts, and technical tools under the disciplined approach focused on continuous improvement. (p. 1)

The modern quality management movement originated after World War II in Japan with assistance from

industrial scientists such as Drs. W. E. Deming and J. M. Juran (Deming, 1986; Walton, 1986). The principles of TQM provided the tools necessary for Japan's devastated industrial base to rebuild and excel in world markets by meeting the consumer's demand for quality products. America finally awoke to the advantages of TQM and, beginning in the late 1970's, the principles of TQM began to find their way into major American corporations, principally the automobile, aircraft, computer, defense, and healthcare manufacturing industries. As the new management philosophy begins to take hold in America, it has been generally applied to industrial settings. But, since the middle 1980's the TQM movement has been transitioning to the service-orientated healthcare industry (Johnston, 1989; Batalden & Buchanan, 1988).

Lowe (1986) discovered that many TQM programs begin with the management philosophies of quality experts such as Deming, Juran, or Crosby, and that many companies prefer to adopt the expert who is most consistent with the philosophy of their own organization. This precludes the need to perform exhaustive in-house research and development. Lowe also found that each of the experts provides a unique program with some similarities in training and quality measurement.

The literature indicates that the key elements of the vast majority of implementation publications and articles are based on the philosophies of Deming. Deming (1986) provides a complex mix of philosophies which are outlined in his "14 Points". These points are intended to guide management during the transition to a TQM organization include;

1. Create a constancy of purpose toward improvement of products and services.
2. Adopt a new philosophy that poor quality is intolerable.
3. Cease dependence on inspection to achieve quality.
4. End the practice of awarding business on the basis of price tag.
5. Improve constantly and forever the system of production and service, to improve quality and productivity, and thus decrease costs.
6. Institute training on the job.
7. Institute leadership.
8. Drive out fear.
9. Break down barriers between departments.
10. Eliminate slogans, exhortations, and targets for the work force.

11. Eliminate work standards on the factory floor, management by objectives, management by numbers and numerical goals. Substitute leadership.
12. Remove barriers that rob the worker of pride in workmanship.
13. Institute a vigorous program of education and self improvement.
14. Put everyone in the company to work to accomplish the transformation. (p. 23-24)

According to Deming (1986), the most critical concept of TQM is that an organization must continually improve to provide the highest quality service to the customer. He further explains that quality improvement will begin a chain reaction in any organization. The chain reaction begins with improved quality which decreases costs by reducing rework, waste, scrap, and delays. The resultant reduced cost leads to increased productivity which will improve market share and again reduce cost even further, thus permitting an organization to stay in business and grow. (p. 3)

The literature consistently refers to Deming as a cornerstone of quality management. However, Damon (1988) and the Naval Personnel Research and Development Command (NPRDC, 1989) observe that Deming certainly explains his

philosophies of how to change into a Total Quality organization but that he does not tell us how to make this transformation.

Difficult as the transformation may be, the impact of Total Quality Management on the delivery of healthcare includes increased quality of service provided to the customer, greater consumer satisfaction, increased efficiency, effectiveness and satisfaction of employees, and increased productivity (HCA, 1988). Research indicates that hospitals can obtain a 25 to 40 percent reduction in operating expenses by implementing a TQM program (Berwick, Godfrey and Roessner, 1990).

Organizational Assessment.

NNMC is a 750 bed, full-service military teaching hospital located near the nation's capitol in Bethesda, Maryland. NNMC employs over 3,300 military, civilian, and contract personnel with an estimated budget for fiscal year 1990 of \$88,440,000. It is organized into ten functional Directors and sixty-nine departments providing a complex mix of administrative, ancillary, nursing, medical, and surgical inpatient and outpatient services. NNMC is a complex matrix organization which was

reorganized in June 1989 as a result of several studies intended at improving the efficiency, effectiveness, and productivity of the organization.

Identification of the current quality improvement programs and efforts of NNMC is critical to the implementation of a new quality-based management philosophy (Crosby, 1979). To evaluate the current quality management activities, organizational structure, and culture of NNMC, the Organization Manuals for the NNMC (NNMCINST 5450.1, 1990) and BUMED (BUMEDINST 5450.1, 1988), were reviewed along with several other directives.

The Command Organization Manual (NNMCINST 5450.1, 1990) indicates that the quality efforts of NNMC are focused in the command Quality Assurance (QA) Program. The QA Program Director reports directly to the Deputy Commander and is responsible for implementation of a comprehensive QA program. The program requirements are those of the traditional QA program as defined by JCAHO and BUMED. The program is guided by NNMC Instruction 6010.3 (1989) which requires the establishment of several committees with each department developing and implementing it's own quality assurance program.

The NNMC QA program is transitioning from a traditional orientation of monitoring only medical care to

monitoring the complete service provided to customers. This transition is evidenced by the recent requirement for all clinical and non-clinical departments to establish and maintain a quality assurance program.

Quality activities are also found in several other departments and programs:

a. The Planning Department has control of the Measures of Effectiveness (MOE) Program which has a primary focus on non medical outcome measures.

b. The Internal Review, Inspection, and Control Programs (NNMCINST 5000.52, 1990; NNMCINST 5200.2, 1990) focus on auditing and compliance with various directives.

c. The Patient Relations Program (NNMCINST 6320.6, 1990) which focuses on customer feedback and assessment. To implement any comprehensive quality improvement effort into an organization it is required to change the culture of an organization. Daft (1986) states that the culture of an organization is "the key set of values, beliefs, and understandings that are shared by members of the organization." To identify the culture of NNMC, the social structure, slogans which espouse the philosophy of the organization, and ceremonies of the organization were evaluated.

TQM Implementation.

The literature concerning implementation methodologies for integrating TQM into an organization is expansive and continues to grow. In the absence of a standard guide to implement TQM, several healthcare and management consulting organizations have developed hospital and service-orientated TQM implementation programs. These organizations include the Hospital Corporation of America (HCA, 1988), the Juran Quality Institute (Juran, 1988), Organizational Dynamics Incorporated (Labowitz, 1990), Harrington, Hurd, and Rieker (Harrington, 1989), the Joiner Institute (Scholtes, 1989), and the Harvard Community Health Plan National Demonstration Project (HCHP, 1989; Berwick, Godfrey, and Batalden, 1989). In addition to these private sector programs, DOD (1990) and the Naval Personnel Research Development Center (NPRDC) (Houston and Dockstader, 1988) have developed extensive TQM implementation guidelines based on the philosophies of Drs. Deming and Juran.

Initial evaluation of various quality improvement programs revealed several common themes or principles. These include the concepts that 1) an organization must truly commit to quality for the long term, 2) change must occur from the top down, 3) the organization must become

customer oriented, 4) statistical control techniques must be used to focus on process and variation control, 5) the use of non-customer oriented inspection and numerical quotas must be discontinued, 6) participative management must be used to solve process problems, 7) management must provide training and retraining for all employees, 8) and the organization must strive to provide the highest quality work at all times - in all levels of the organization.

With the issuance of Executive Order 12637 on 27 April 1988 (Reagan, 1988) the President of the United States identified a need to increase productivity through improving quality. His order required annual productivity increases for all Federal Agencies. In implementing this new requirement, DOD has yet to publish standardized documentation or guidance to assist managers with the President's mandate. Failure to agree on the philosophies to be used by the DOD TQM leaders who are developing the guidance could have a negative impact on all Navy implementation, assuming their philosophies were not compatible.

To safeguard against such a situation, several resources and points of contact within the federal government have been established to ensure that any

current or future DOD requirements will be incorporated into the proposed plan for implementation. The Office of the Under Secretary of Defense for TQM, the BUMED Deputy Director for Quality Management, the Federal Quality Institute, and the Commanding Officer, Naval School of Health Sciences, Bethesda, MD, are all coordinating efforts to ensure a unified front during implementation. The Naval School of Health Sciences (NSHS) is tasked with incorporating TQM into Navy Medical Department training programs, establishing a Navy Medical Quality Institute to serve as a clearing house for quality improvement information and provide consulting services (Shuler, 1990).

DOD began using the principles of Quality Management in 1987 as the key to the continual improvement of all products and services (Garrett, 1988). The DOD implementation documentation reveals heavy emphasis on the methodologies and philosophies of Drs. Deming and Juran (DOD, 1988). With this in mind, and under the Direction of DOD, DON has now developed an implementation schedule for the introduction of TQM which requires Navy medical and dental facilities to begin implementation in 1990.

Purpose

The purpose of this Graduate Management Project is to develop an executable plan which will incorporate the principles of Total Quality Management into the culture and the daily operations of NNMC. The project will provide managers with a strategic implementation plan which when carried out, should result in the delivery of higher quality, lower cost services. The plan will consist of a Plan of Action and Milestones (POA&M), a preliminary analysis of the cost of implementation, a list of potential areas for initial targeting during implementation, and the identification of organizational changes could occur which would support the acceptance of TQM. The plan will incorporate the requirements and regulations which are imposed on NNMC by the Joint Commission for Accreditation of Healthcare Organizations (JCAHO), Bureau of Medicine and Surgery (BUMED), and other organizations.

Objectives.

The expanded objectives of the project are:

1. Conduct an organizational assessment of NNMC to identify the mission, vision, organizational structure, external relationships, regulations directing the delivery of services, culture, and quality management programs.

2. Identify the requirements and objectives of DOD, DON, and the Navy Medical Department TQM programs.

3. Identify and evaluate methodologies currently being used in the healthcare industry to implement Total Quality programs into institutions and identify the program which will best accommodate the requirements at NNMC.

4. Develop a Plan of Actions and Milestones (POA&M) for the implementation of total quality at NNMC.

5. Develop a preliminary estimate of the cost for implementation.

6. Identify organizational and cultural changes which will enhance the implementation of TQM.

Methods and Procedures

Assumptions

The methods and procedures outlined below are based on the following assumptions.

1. The Surgeon General of the Navy and the Commander, NNMC are committed to implementing TQM and they demonstrate that commitment by providing support and action.

2. Assets will be made available to provide training, education materials, and the personnel resources to implement a TQM program.

Methods and Procedures

1. Identify the development of the current organizational structure of NNMC, conduct an initial assessment of the culture, and identify the key regulations directing the delivery of services at NNMC.

A documental analysis will be performed to assess the mission, organization, guiding principles, and directive system at NNMC. The assessment will determine the mission, vision, organizational structure, external relationships, regulations directing the delivery of services, culture, and identify quality management programs. In addition to the various directives of the organization, reports on the management of NNMC from the

Navy Blue Ribbon Panel (DON, 1988) and the Navy Medicine Management Assist Team (MAT) will be used.

Due to the unique military structure of NNMC, no suitable tools could be identified to quantitatively assess the culture of NNMC until DOD released the Quality and Productivity Self Assessment Guide for Defense Organizations in May 1990 (DOD, 1990). Due to the lack of a validated assessment instrument the initial assessment of the culture of the NNMC will be conducted through personal observation during a ten month period. The assessment will identify the social structure, organizational slogans, and employee recognition programs at NNMC.

2. Identify the current programs which support the various quality management programs at NNMC and estimate the cost to maintain the current quality programs.

Using selected informal interviews with key quality managers of the organization and document reviews, identify the organizational structures, programs, and cost centers which provide the current quality programs at NNMC and identify the current cost of providing these programs. The programs scheduled for evaluation include:

a. Quality Assurance Program

b. Planning Department and the Measures of Effectiveness program.

c. Internal Review, Inspection, and Control Programs

d. Patient Relations Program

e. Committees and Boards as appropriate

3. Identify the principles, requirements, and objectives of DOD, DON, and the Navy Medical Department TQM programs.

A review of DOD, DON and Navy Medical Departments TQM principles and guidance will be conducted to establish the guidelines and constraints for a TQM implementation plan. This is required to assure acceptance of the plan and its capacity to merge with higher authority requirements. The requirements and objectives will be identified by using interviews and a document analysis of current TQM guidance, directives, and implementation plans from the DOD, DON, and BUMED.

4. Identify methodologies currently being used in the healthcare industry for implementing total quality programs into institutions.

Through site visits and document analyses, a review of current implementation programs will be conducted using

the TQM programs from the Hospital Corporation of America (HCA), Juran Institute of Quality, Harvard Community Project, and Joiner Associates Consulting Group.

5. Develop a Plan of Actions and Milestones (POA&M) for the implementation of total quality at NNMC. The plan would include specific actions and a cost analysis for implementation.

Develop a POA&M for implementing TQM. The plan will provide a time-phased schedule for implementation, address training requirements, and identify initial implementation costs. A graphically display a time-phased schedule of events for critical issues of implementation will be developed.

6. Identify organization and cultural changes which will enhance implementation of TQM.

Using personal interviews and a review of organization documents, identify changes to the organization which will enhance implementation of TQM. These changes will include the incorporation, addition, or deletion of departments, committees, reporting requirements, and training programs to reduce confusion, conflict, and will provide unified support of the principles of TQM.

Reliability and Validity

To ensure the reliability of the current implementation plans, source documents will be used vice abbreviated versions found in articles. To ensure a valid cost analysis, cost data will be obtained from the NNMC Fiscal Accounting Office or will be based on the standard accounting methodologies used by the Comptroller of the Navy.

Ethical issues

No substantial ethical issues have been identified. The issue of maintaining the confidentiality of QA information will be resolved by not citing specific information which is only found in the QA reports.

Results

Organizational Assessment

In order to properly develop a comprehensive plan which will change the structure, culture, and operations at NNMC, a thorough understanding of why and how NNMC operates is required. The assessment evaluated the mission, vision, organizational structure, external relationships, regulations directing the delivery of services, culture, and identify quality management programs.

Mission.

The mission of the NNMC is outlined in the NNMC Organization Manual (NNMCINST 5450.1, 1990) and identifies the reasons for which the organization exists. The mission contains the following major elements:

1. Provide healthcare services to active duty personnel.
2. Maintain the readiness of personnel and facilities at the level required for wartime contingencies.
3. Provide medical personnel support to the operational forces of the Navy.
4. Provide healthcare services to authorized beneficiaries not on active duty.

5. Conduct Graduate Education and other training programs as appropriate.

6. Maintain accreditation from appropriate government and civilian agencies.

In addition to the six elements of the mission statement the Organization Manual identifies 28 specific functions NNMC is required to perform. The Mission and Function statements of NNMC only contains one mention of quality. This reference states: "Operates an effective Quality Assurance/Risk Management Program to assess and improve healthcare provided in both inpatient and outpatient settings" (NNMC, 1990, p. 2).

Vision.

The vision of an organization describes where senior management desires the organization to be in the future. NNMC currently has published only short-term annual goals to communicate the vision of senior managers (Appendix A). The goals for Fiscal Year 1990 include engendering the TQM culture, increasing customer satisfaction, increasing access, improving specific programs and functions, and continuing to grow (Hagen, 1989). The goals do provide a frame work from which management can direct efforts and resources, albeit for only the short term.

Long term strategic plans are needed to ensure continuity and coordination of programs into the future. The development of long term planning and goals will be addressed in the implementation process.

Organization structure.

In order to develop an organization wide implementation plan the structure and basic operations of NNMC must be identified. To evaluate NNMC's organization several key elements were identified including the development of the current structure, formal and informal power structures, and organizational operational guidelines.

In 1989 a major restructuring of the Navy Medical Treatment Facilities in the Washington, D. C. area was accomplished. This restructuring was a result of an analysis directed by the Department of the Navy and conducted by the Navy Medical Blue Ribbon Panel (BRP). The BRP found that the "existing organization structure is an ineffective and unwarranted drain of manpower assets" (DON, 1988 p. ES-8). The reorganization was intended to perform several functions:

1. Increase the non-medical commands involvement in the delivery of healthcare.

2. Reduce overhead by eliminating ineffective regional support commands.

3. Eliminate ambiguities, redundancies, and clarify areas of responsibility (DON, 1988).

The reorganization in the Washington, D. C. area combined the Naval Medical Command, National Capitol Region (NMCNCR), Naval Hospital Bethesda (NAVHOSP), and the Naval Clinics Command, Washington, D. C. into one command - NNMCM. Prior to the reorganization the NMCNCR provided clinical coordination for the majority of MTF's on the upper east coast of the United States and provided fiscal, supply, and technical medical services, as well as exercising military control over all of the activities within it's geographical area. NAVHOSP was responsible for providing medical care and conducting graduate medical education. The Clinics Command coordinated ten ambulatory outpatient clinics in the Washington, D.C. area.

The consolidation brought about by the reorganization decreased the levels of bureaucracy and the amount of support staff for regional functions. However, few of the functions performed by the facilities decreased. Combining the missions of the three activities into what is now known as the NNMCM required the development of a unique structure.

The NNMC structure is now a flat, hierarchical, bureaucratic, military organization with ten functional directors, sixty-seven Departments, and seventeen Special Assistants to the Deputy Commander or the Commander (NNMCINST 5450.1, 1990). Additionally, there are sixty-seven committees and boards which increase the complexity of the organization (NNMCINST 5420.2A, 1990).

Committees and boards are generally found in most critical processes and functions of NNMC. Utilizing many of the existing committees and boards as Quality Management Boards (QMB) or Project Action Teams (PAT) will ease the transition and speed the implementation of TQM into the culture of NNMC. The transition of the committees and boards to TQM work groups will require an evaluation of charters and training of most members.

External organizational relationships.

NNMC is responsible to a variety of organizations. These multiple relationships add to the overall complexity of the organization by requiring NNMC to respond to the needs and requirements of more than one supervising agency. Currently, NNMC reports to BUMED for technical issues and support while the Health Services Organization (HSO), Norfolk, VA provides guidance and support for funding, technical, and manpower issues. The Responsible

Line Commander (RLC), Commandant, Naval District Washington (NDW), provides guidance for military command matters.

NNMC provides support to eight tenant commands which reside on the Bethesda complex. These commands include the Uniformed Services University Health Sciences (USUHS), Naval School of Health Sciences (NSHS), Navy Medical Data Services Center (NMDSC), Naval Medical Research Institute (NMRI), Naval Health Sciences Education and Training Command (HSETC), Armed Forces Radiological Institute (AFRI), and the National Naval Dental Center (NNDC). NNMC also has an extensive mutual support agreement with the National Institutes of Health for joint research in AIDS and cancer. NNMC is responsive to many professional medical organizations which provide accreditation for Graduate Medical Education Programs and to the JCAHO which a comprehensive accreditation survey of NNMC every three years.

These complex relationships will have both positive and negative impacts during the implementation of TQM. Positive aspects include the coalitions which can be developed to share information, resources, training opportunities, and experiences with TQM. Negative impacts include the possible establishment of different or

conflicting TQM program requirements, and incongruous philosophies from superior commands which could greatly impede the change process.

Regulations.

The rules and regulations which provide policy and direction at NNMC is contained in the Command Directive System. Directives are generally promulgated in response to direction from higher authority or are the result of a need at the facility to provide documented direction on a specific function.

The Directive System which governed the organizations prior to the reorganization remained in force until they can be integrated with the new system. An analysis of the Directive System transition was conducted by evaluating the number of directives which would identify how many sets of rules governed the operations of NNMC. The survey revealed that during the six month period between October 1989 and March 1990 the number of directives decreased 42.33 percent, see Figure 1 (NNMCNOTE 5215, 1990).

INSERT FIGURE 1

BETHESDA DIRECTIVES

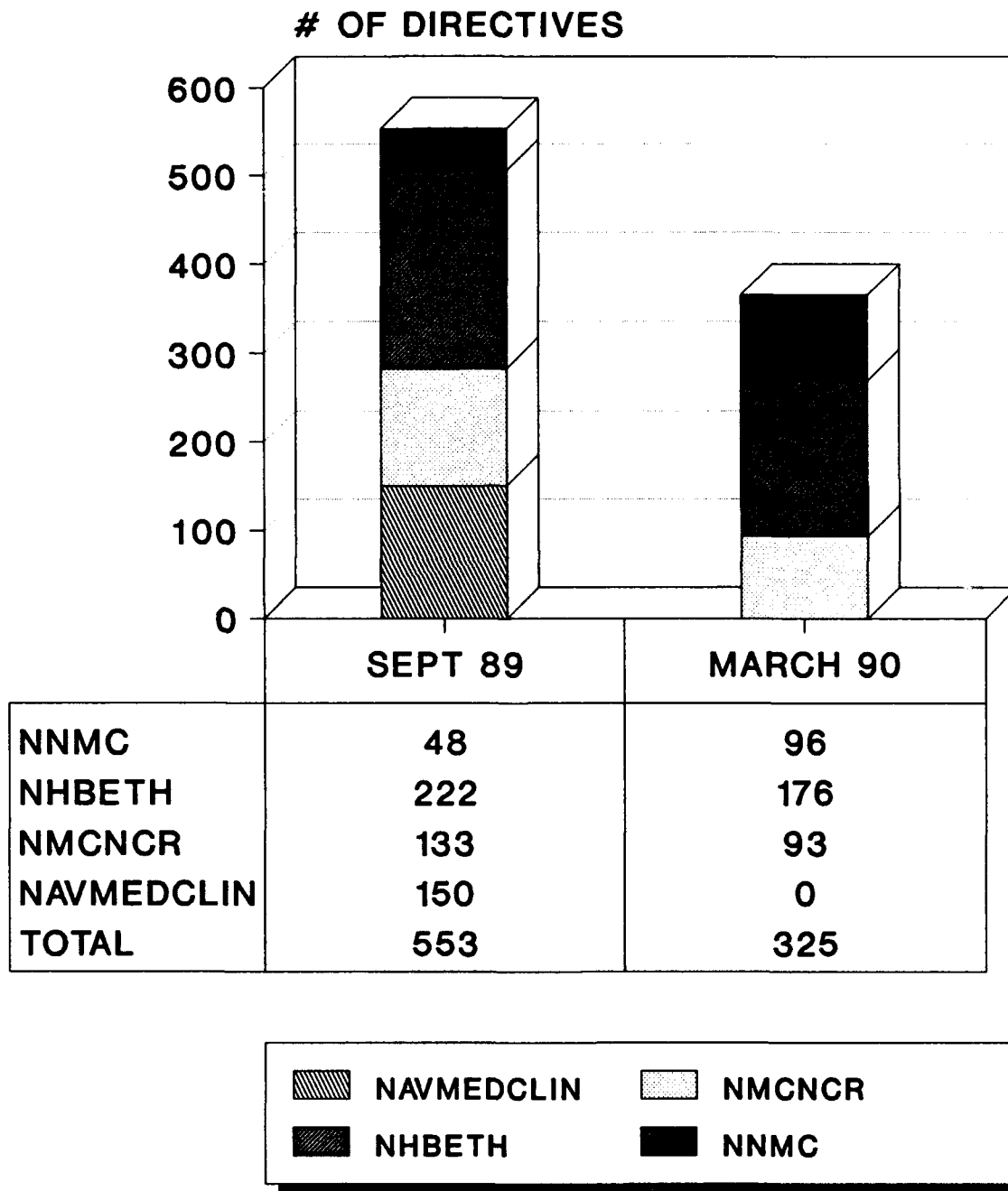


Figure 1

This dramatic decrease was due to the consolidation or cancellation of many directives which duplicated guidance or no longer had any impact due to the reorganization.

NNMC is a complex matrix organization which is still in transition. Key organizational elements which will impact on the implementation of TQM include the medical staff, committee and board structure, and the number of changing directives in the organization.

Culture.

To identify the culture and the values which are shared by the employees of NNMC a cultural assessment was conducted. The assessment reviewed the social structure, slogans which espouse the philosophy of the organization, and ceremonies of the organization. The evaluations were conducted using personal observations for a ten month period.

Military staff physicians and residents are the dominating coalitions of most informal and formal structures at NNMC. Other coalitions include Medical Service Corps Officers, Nurse Corps Officers, Chief Petty Officers, and departmental workgroups. The majority of these groups have formal and informal monthly meetings for networking, education, and social purposes.

The medical staff dominate the power structures of the organization and will be a key element in the implementation plan. Failure to make the medical staff believers in and leaders of the organizational change will adversely effect the implementation of TQM.

Two slogans were identified which are used throughout the organization are "Standing by to Assist", which is adopted from the Surgeon General of Navy, and "Caring Is What We Do Best". The slogans clearly reflect the belief that the whole organization is ready and willing to provide assistance when required. Discussions with numerous staff indicate that the slogans and their meanings are well known throughout the organization.

Formal ceremonies at NNMC are based on the traditions of the Navy and can be very elaborate. After observing several formal award ceremonies, it was noted that the vast majority of the awards presented were for individual performance, longevity, and retirement. Formal recognition of civilian employees is through cash awards. Letters of Appreciation, Letters of Commendation, and medals are awarded to military members of the command. The process to recommend an individual for an award is outlined in a command directive and can be very complex depending on the level of the award to be presented.

Informal recognition routinely occurs within most work centers for special events such as birthdays, weddings, promotions, transfers, and retirements.

During a ten month rotation through many departments and clinical areas the following values were observed. First, the vast majority of employees strongly believe that the best medical care available is provided to all patients. Second, employees do not appear to constantly place a high value on reducing chronic low quality service to the customers. Common attitudes observed include "It can't be fixed", "So What", and "They should know it is not working - I am not telling them". Some of the low quality aspects of service identified in several informal personal interviews with NNMC customers include difficulties in access to care, long waiting times for appointments or other services, few evening clinics, and parking problems.

The majority of the employees are caring healthcare professionals and will welcome the chance to assist with improving the quality of NNMC's services and make work process more efficient.

Quality Management Activities.

The NNMC QA Program is the major quality activity at the command. The existing QA program in Navy Medicine was

developed in a response to numerous malpractice allegations against the Navy in the early 1980's and the ever increasing requirements of JCAHO. During a recent study of Navy Medicine the Navy Medical Blue Ribbon Panel (BRP) found that the QA program does reduce malpractice claims. However, the program has rarely allocated additional resources necessary to support the program. This lack of support has adversely affected the productivity of treatment facilities (DON, 1988) by forcing commands to utilize existing personnel assets to support the QA Program.

An assessment of the quality management programs which assure quality care and services at NNMC was conducted. These quality programs evaluate, monitor, inspect, and provide oversight of most command activities.

The evaluation revealed that there are eleven major programs or functions which monitor quality at NNMC. Monitoring is generally outcome-oriented and there are several programs which measure and oversee similar functions. The multiple oversight programs increase the amount of resources expended by departments to prepare numerous reports, and provide conflicting guidance to managers.

A detailed cost analysis of the quality management activities was conducted and a summary of the findings are found in Table 1 and a detailed report is found in Appendix B. Based on the analysis quality activities cost NNMC an estimated \$2,098,499 annually, which is 2.37 percent of the estimated Fiscal Year 1990 budget.

INSERT TABLE 1

Table 1

QUALITY MANAGEMENT ANNUAL COST SUMMARY

<u>QUALITY FUNCTION</u>	<u>ANNUAL COST</u>
A. Command Quality Assurance Program	1,017,135
B. Nursing Quality Assurance Office	237,761
C. Maryland Quality Assessment Program	1,500
D. JCAHO inspection	14,000
E. Command Inspection, Control, and Review Office	181,532
F. Executive Committee of the Medical Staff	39,602
G. Measures of Effectiveness Program	294,815
H. Equal Employment Office	36,972
I. Safety Office	65,624
J. Patient Relations Office	122,491
K. Medical Record Peer Review Program	<u>87,066</u>
	TOTAL \$2,098,499

To evaluate the cost of the NNMC quality management efforts two guides were used from Labowitz (1990) and Crosby (1979). The references compare the cost of quality to the gross income and annual revenues respectively. Since NNMC is a public facility and generates no significant income or revenues the standards will be compared to the estimated operating and maintenance budget and then to estimated revenues if services were reimbursed for each inpatient bed day and outpatient visit.

The first comparison is based on the estimated NNMC operation and maintenance budget for fiscal year 1990 of \$88,440,000. The analysis revealed that the estimates are 2.37 percent of the estimated budget which exceeds the guide provided by Labowitz (1990) of one to two percent. However, the guide provided by Crosby (1979) of 2.5 percent higher than the current estimated expenditures.

The second comparison is based on the estimation of annual revenues for NNMC which is compared with the estimates cost of quality programs. The estimate of revenues for NNMC was accomplished by using the projected number of occupied bed days (OBD) and outpatient visits (OPV) for 1990 based on the first six months of fiscal year 1990. The OBD and OPV figures were then multiplied

by the civilian reimbursement rate determined by the BUMED Comptroller (BUMED, 1990). The calculations resulted in estimated revenues for 1990 of \$89,891,764. The comparison reveals that the cost of current NNMC quality programs are 2.33 percent of the estimated revenues. This 2.33 percent is within the standard set by Crosby (1979) but again exceeds the guide provided by Labowitz (1990).

The analysis indicates that NNMC is expending a high to excessive amount of resources on quality management in 1990 and that an opportunity for improvement exist and must be pursued.

Quality Training Programs.

The identification of existing quality training programs is required to insure that they are addressed in the activity implementation plan. Two quality related training programs were identified at NNMC. The programs are the command orientation and the TEAM customer relations programs.

The command orientation program is required by JCAHO (1989) and is provided to all personnel beginning work at NNMC. Topics covered in the four day course include quality assurance, and patient relations training. The course provides the first opportunity for the command to share the values and goals of NNMC with the new employees.

It is recommended that this forum be modified to include basic information on TQM principles.

TEAM is a leadership and patient relations training program designed by a consulting firm for the Navy and Air Force Medical Departments. The program was developed with two objectives. First, to increase a treatment Facility's accessibility by concentrating on patient and visitor relations. Second, to increase the self-worth and self-image of every employee (Tschohl, 1989).

The program is presented in a multimedia format with a heavy emphasis on student participation and is generally provided to small work groups. The use of small groups permits the facilitator to customize the training and discuss common issues of the students. The training program supports the creation of a positive customer orientation and is a critical component of any quality improvement program in a service organization.

The orientation and TEAM training programs provide critical training essential to foster the proper attitudes required for an effective customer oriented organization. It is recommended that both programs be incorporated into the TQM implementation plan to assist with the required change in the NNMC culture.

Governing Agencies TQM Policies and Guidelines

The development of federal quality management programs and guidance are in response to Executive Order 12677, signed by President Reagan in April 1988 (Reagan, 1988). The order prompted productivity and quality management movements throughout the Federal government. This research is restricted to only those agencies which have governance or oversight responsibilities of NNMC.

The evaluation of the guidance from the governing agencies of NNMC was conducted to assure that a proposed plan would be compatible with mandated strategies. DOD, DON, and BUMED have provided guidance for implementing TQM which is in different stages of development. The guidance provided includes implementation plans and guiding principles for implementing TQM.

Department of Defense.

Under the direction of the Under Secretary of Defense for TQM, DOD published a posture statement on quality, developed a Master TQM Plan (DOD, 1988), and is preparing to publish a comprehensive Implementation Guided for DOD agencies to use in implementing TQM.

The DOD "Posture on Quality" (DOD, 1988) provides policy statements which are intended to change the way business is conducted within the various agencies of DOD.

The statements identify the need for high quality and productivity in daily activities, include quality as an element of competition, and cite the need for continuous improvement (Appendix C). The NNMTC TQM implementation plan should incorporate the guidance provided by the statements in the DOD Posture statement.

DOD first published a TQM Master Plan in August 1988 (DOD, 1988). The Master Plan identified short and long range plans to incorporate TQM into the culture of DOD. The Master plan is very general, offers no specific guidance for implementation at an activity, and will not directly impact on an activity implementation.

The DOD Implementation Guide is a two volume text which identifies strategies, management models, tools, and techniques for implementing TQM at an organization. Key features of the guide includes examples of specific actions for implementing TQM in a military organization and a TQM implementation model. Although the guide could be interpreted as the beginning of a new management program, the guide does not mandate any TQM reports to higher authority or place any other requirement on DOD organizations, leaving the actual implementation to the leaders of the various organizations.

The implementation model provided by DOD is a seven step process (figure 2). The implementation steps of the DOD Model include:

1. Establish the TQM management and cultural environment.
2. Define the mission of each component of the organization.
3. Set performance improvement opportunities, goals, and priorities.
4. Establish improvement projects and action plans.
5. Implement projects using improvement methodologies.
6. Evaluate the projects for effectiveness.
7. Review and recycle to step two.

INSERT FIGURE 2

The guide (DOD, 1990) acknowledges that only one model is provided and that others may be used to customize a program to fit the unique DOD organization (DOD, 1990). This flexibility provides managers the freedom to design a TQM implementation program to support NNMC.

The DOD documents reviewed provide excellent guidance

Typical Total Quality Management Model

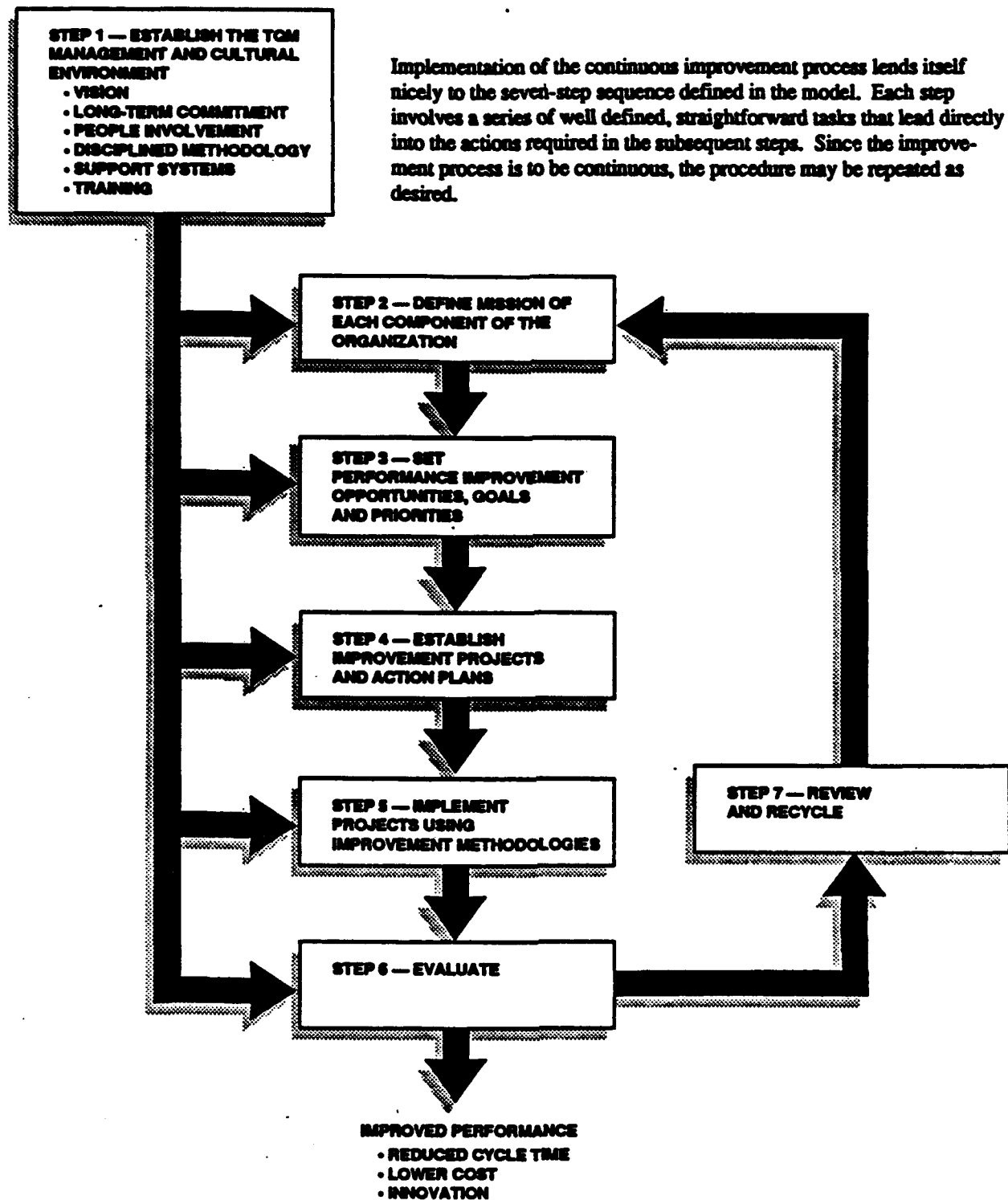


Figure 2

Reference: Adapted from the Honeywell Aerospace and Defense Performance Improvement Guide.

which should receive consideration during the development of an activity TQM implementation plan, but they do not mandate or require any specific methodology or functions.

Department of the Navy.

The guidance and principles for implementing TQM from DON is much more specific than that from DOD. Two documents provide primary guidance: 1) Secretary of the Navy Instruction 5200.31B, Department of the Navy Productivity Improvement Program (DON, 1984), and 2) the "DON Total Performance Improvement Action Plan" (DON, 1988).

The DON Productivity Improvement Program (DOD, 1984) was an attempt to increase awareness for increased productivity and the use of quantitative data by management throughout the Navy. The program contains many of the essential components of a quality TQM program. It is this researchers opinion that the program failed to reach it's full potential due to a lack of support from senior DOD management.

The DON Total Performance Improvement Action Plan (DOD, 1988) was developed in response to Executive Order 12637. The plan is intended to assist DON implement TQM and meet the requirement for increased productivity. Key objectives of the Action Plan include:

1. Exceed the President's goal of an average three percent per year increase in quality/productivity improvement.
2. Respond to measurement and reporting requirements of Office of Manpower and Budget (OMB) and DOD.
3. Foster an environment for continuous improvement based on a management philosophy that encourages participation and positive change to remove impediments and improve performance. (DON, 1988, p. 2)

Implementation of the Action Plan began in the industrial areas of DON in 1988. All other major areas were directed to begin the change process in accordance with a time phased schedule which directed medical and dental facilities to begin the transition to TQM in 1990. In addition to the implementation requirements for DON, the Action Plan identifies long-range total performance improvement objectives and short-term goals and strategies which must be considered when developing an implementation strategy for NNMC.

The long-range goals are intended to support the cultural change which needs to occur in DON. The Action Plan requires each organization to emphasize the following elements as it carries out the Action Plan (DON, 1988, p. 6):

1. Continuous improvement in quality, timeliness, and cost.
2. Improved customer satisfaction.
3. Emphasis on Total Quality Management.
4. Reduction of stovepipe organizations wherein mission and functions do not directly support the DON streamlining requirements.
5. Improved workforce motivation and rewards.
6. Employee involvement concepts to encourage innovation and improve the quality of work life.
7. Integration of Automated Data Processing (ADP) systems to reduce redundancy, duplication, cost, unnecessary data and work.
8. Automated Decision Support Systems and mechanization.
9. Streamlining of all processes.

The Action Plan also provides that specific goals and strategies for continuous improvement which are required to be used by all Navy activities. Each goal is further assigned specific action steps which designate responsible organizations to perform the action and identify measures to ascertain goal attainment. The following apply directly to BUMED and NNMC (DON, 1988, p. 7-8):

Goal 1: Establish measures of performance at all commands to measure attainment of the President's goal for increased productivity.

Goal 2: Institutionalize a cultural change within DON, emphasizing customer satisfaction.

Goal 3: Improve incentives and recognition methods, including gain sharing, to promote involvement and the performance improvement process.

Goal 4: Maintain and demonstrate visible management commitment, support, and involvement in total performance improvement, including TQM.

Goal 5: Modify processes and policies to reduce procurement lead time for spare parts, support equipment, and services by eight percent per year for four years.

Goal 6: Develop and carry out performance improvement training and awareness programs which emphasize TQM concepts and reinforce the understanding of performance improvement process.

Goal 7: Identify and remove performance improvement road blocks.

Goal 8: Improve communications to share performance improvement information among DON activities.

The critical DON requirements which must be considered with the implementation plan for NNMC in order to comply

with the stated objectives and goals of DON include the introduction of TQM in 1990, development of specific long term goals and specific objectives.

Bureau of Medicine and Surgery.

BUMED serves as the corporate headquarters for Navy medical activities and is the immediate governing agency for NNMC. An extensive effort is on-going within BUMED to create awareness and provide guidance to medical activities for implementing TQM. Several documents providing guidance to Navy Medical Department Commands have been issued or are being developed. However, little specific guidance or requirements have been issued.

Published and proposed documents providing guidance include the Navy Medical Department Guiding Principles (Appendix D), the Navy Medical Department Quality Essentials (Appendix E), the Navy Medical Department Vision Statements (Appendix F), the Fiscal Year 1990 Surgeon General Goals and Objectives (Appendix G), and the proposed TQM implementation Plan for Navy Medicine (DeFrancis and Krieger, 1990).

To improve the coordination of TQM implementation, BUMED established a position of Assistant Chief for Quality Management (QM), MEDCOM-08, on 14 March 1990 (BUMED, 1990). The Quality Management Office is tasked

with formalizing the continuous improvement effort throughout the Navy Medical Department. The Office of QM coordinated the development of the documents cited above, coordinated several training and awareness programs, and was a key player in the creation of the Quality Management Institute to be located at the Naval School of Health Sciences, at Bethesda, Maryland. Coordination with this office is critical and will be addressed in the proposed implementation plan.

The Chief of the Quality Management Office, BUMED, has identified six critical elements for the implementation of TQM at the headquarters level and ultimately within the entire Medical Department:

1. Change the environment and culture of the organization
2. Top Management commitment
3. Customer involvement
4. Training and Education
5. Use of implementation tools
6. Development of a strategic plan

The Navy Medical Department Guiding Principles were promulgated in 1989 with the purpose of providing a common set of operating principles. The Guiding Principles have been widely disseminated at conferences and through a

poster campaign to increase the awareness and establish a consistency of purpose within the Navy Medical Department.

The Guiding Principles identify the primary mission of the Medical Department to be: "ensure the best physical and mental health of the men and women of the United States Navy and Marine Corps". The Guiding Principles also state that the Medical Department will "Continually improve all aspects of our enterprise.".

The Medical Department Quality Essentials are based on the critical elements of a TQM organization. The Quality Guidelines demonstrate the commitment from senior management and provide a basic direction for improving quality at Navy medical treatment facilities and must be incorporated into the NNMC implementation plan.

The vision statement for the Navy Medical Department is a statement of long term goals. The goals include adopting the "continuous improvement" philosophy by 1993 and improving the perception of the image and quality of the Medical Department by customers, employees, and other healthcare organizations.

Short term goals and objectives are described in the Surgeon General's (SG) Fiscal Year 1990 Goals Statement (Zimble, 1990). The statement provides the Navy Medical Department and NNMC specific guidance for the

implementation of TQM and must be addressed. One of the goals of the SG is "Engendering the TQM culture to delight our customers.". To support this goal four objectives were developed which have an impact on NNMC (Zimble, 1990, enclosure 2, p. 1-2):

1. Provide TQM training for executive management and facility based trainers at each BUMED activity who will in turn train the staff of that activity. A training program to meet this goal is planned to be released by September 1990.

2. Establish Quality Management Boards (QMB's) in each activity.

3. Ensure that all commands have an on-going TQM process evaluation program. The goals will require each activity to select the processes which will be targeted for improvement.

4. Revitalize the "customer orientation" attitude among the staff at BUMED.

A summary of the critical requirements promulgated by NNMC governing agencies which direct action to NNMC and must be incorporated into the NNMC TQM Implementation Plan include:

1. Executive Order 12677 (Reagan, 1988) requires a three percent annual increase in productivity.

2. The DON Total Performance Action Plan (DON, 1988) requires performance increases in excess of the Presidents requirement of three percent.

3. DON (1988) requires the implementation of TQM in 1990.

4. The objectives identified to meet the SG's objective to engender a TQM culture (Zimble, 1990).

Implementation Strategies

A review of TQM implementation programs used in the healthcare industry was conducted. TQM programs from the Hospital Corporation of America (HCA), Juran Institute of Quality, Harvard Community Project, and Joiner Associates Consulting Group were evaluated.

In addition to the planned reviews additional implementation programs were reviewed and found to be germane to this research. The additional plans include the 14 step model from Crosby (1979) and the implementation plan from the Naval Hospital San Diego, California (Halder, 1990). Site visits were conducted at the George Washington University Medical Center, Washington, D. C. and BUMED.

The review of the various programs revealed that many of them provided guidance and strategies for changing the corporate culture and various methods to perform process improvement. The analysis of each program focused on the overall implementation strategy presented in each program.

Hospital Corporation of America.

HCA is a major healthcare network of 75 acute care hospitals which began implementing TQM in 1986 and as of April 1990 had undertaken the change to quality management in 40 facilities. The effort is coordinated by Dr.

Batalden from HCA's corporate Headquarters in Nashville, Tennessee with a staff of six quality and productivity experts. To determine which organization was to receive the initial training HCA offered several awareness programs. HCA then assisted only those organizations which demonstrated senior management commitment.

The HCA Quality Leader Workbook (HCA, 1988) identifies four basic steps for TQM implementation:

1. Commitment from senior management.
2. Education of senior management.
3. Establishment of a Quality Improvement Council.
4. Beginning of process improvement actions.

HCA provides an extensive training program to support executives, facilitators, and managers. The basic education program consist of two courses, with other courses directed to the group facilitators and trainers. HCA has other more advanced courses under development.

The HCA Quality Improvement approach is based on the philosophies of Dr. Deming. However, unlike Deming, the HCA training uses hospital oriented process improvement models and examples to teach the course materials.

Another unique feature of the HCA (1988) program is the use of the process improvement guide "FOCUS-PDCA"

(Appendix H). This model provides a simple method of teaching and guiding project action teams. The PDCA portion of the model is based on the works of Walter A. Shewhart (1939), which Deming (1986) finds to be a useful procedure to follow for improvement of any stage or to identify special cause variation.

HCA provides a comprehensive plan which is flexible and simple enough to be taught at all levels in a healthcare organization.

Juran.

The Juran Institute of Quality is a consulting company which provides quality improvement contract services. The Institute provides customized on-sight QI training and an extensive videotape training series based on the philosophies of J. M. Juran. Two key concepts were unique to the Juran (1988) methodology. First is the "Quality Trilogy" which is comprised of three critical quality processes; Quality Planning, Quality Control, and Quality Inspection. Juran believes that each of the processes are universal and interrelated (Juran, 1986).

A second key concept of Juran (1986) concerns process improvement. Juran believes that there are two "journeys" a group must take to improve a process. The first is the Diagnostic Journey which analyzes the symptoms and the

cause of the process problem. The second begins at the identification of the cause of the problem through the remedy of the problem. This concept, like the HCA FOCUS-PDCA system (HCA, 1988), is easy to explain and use at the Project Action Team (PAT) level of the organization.

Juran provides a simple and comprehensive implementation process with four major components (Juran Institute, (1988) p. 2-9A).

1. Determine proof of the need for a QI program and identify projects which will be selected for improvements.
2. Organize a QI Council.
3. The QI Council reviews and prioritizes the projects identified in step 1.
4. Identify and train the teams to improve the selected project.

Juran's implementation program is extensive, comprehensive and an excellent guide for improving quality. Unfortunately the documentation reviewed fails to use examples of healthcare process improvement. This lack of healthcare examples may make understanding difficult for some employees of NNMC.

Harvard Community Health Plan.

The Harvard Community Health Plan (HCHP), National Demonstration Project is a network of Healthcare facilities who have been experimenting with creating continuous improvement hospitals. The evaluation of the HCHP Implementation program was based on a course textbook Improving Healthcare Quality (1989). The HCHP QI program is based on the philosophies and techniques of Deming, Juran, HCA, and the results of the National Demonstration Project. The implementation plan is comprised of eight components which include (HCHP, 1989, p. 4-21).

1. The Chief Executive attends Awareness/Tools training.
2. Senior Management demonstrates a commitment to quality improvement.
3. Selection of a Director of TQM.
4. Network with local and national TQM organizations.
5. Train upper management in TQM.
6. Select an Executive Quality Council (EQC) and develop a plan.
7. The EQC selects the first QI project.
8. Train new facilitators and teams for new projects

The HCHP program is comprehensive and directly related to the delivery of healthcare. However, the training

support materials are inadequate to train a large organization such as NNMC.

Joiner.

Joiner Institute is a consulting organization and the assessment of the implementation plan was accomplished by reviewing The TEAM Handbook (Scholtes, 1989). The best attributes of the Joiner program are the explanation of the techniques and tools to monitor processes and the dynamics of how to organize groups to conduct the process improvement.

Scholtes's implementation process contains six steps which include (Scholtes 1989, p. 1.14 - 1.17);

1. Educate and train top management.
2. Develop a two year strategy.
3. Establish a network of coordination, guidance, and technical support.
4. Develop a culture supportive of Quality Leadership.
5. Provide training and education to all employees.
6. Carefully select improvement projects.

The program provided by Scholtes (1989) is a very comprehensive and well presented program. The use of his book is recommended for facilitators and team leaders of any TQM implementation effort.

Crosby.

Philip Crosby (1979) is a well publicized author on quality improvement. The evaluation of Crosby's program was conducted using his book Quality is Free (Crosby, 1979). He provides a 14 step process quality improvement program which includes (Crosby, 1979, p. 108 - 119):

1. Management commitment with an emphasis on defect prevention.
2. Form quality improvement teams with representatives from each department.
3. Perform quality measurement of each activity.
4. Estimate the cost of quality evaluation.
5. Create quality awareness with the employees.
6. Management solves problems to show support.
7. Establish an Ad Hoc committee for the Zero Defects Program.
8. Provide formal supervisor training.
9. Establish a Zero Defects Day.
10. Establish goals
11. Remove causes of errors.
12. Recognition and awards.
13. Create quality circles.
14. Do it over again.

Crosby provides an excellent program and provides a background on the need for QI. However, his program is in conflict with some of the Deming's philosophies, who appears to be the cornerstone of the DOD, DON, and BUMED TQM guidance. An example of the conflict is found with the use of goals and slogans. Crosby requires the use of the slogan "Zero Defects" and the setting of goals while Deming believes that the use of goals or slogans are counter productive and should be avoided. Due to this type of conflict Crosby (1979) should only be used as a reference and not be used to set policy.

Naval Hospital San Diego.

Naval Hospital San Diego (NHSD) is the Navy's west coast equivalent of NNMCC. A review of the TQM implementation plan for NHSD was based on a letter from the Commanding Officer of NHSD to the Bureau of Medicine and Surgery (Halder, 1990). The program review provided by RADM Halder, Commander, NHSD, revealed a true commitment to the Total Quality concept and the expenditure of large amounts of resources. The NHSD TQM program was developed using several consultants and extensive networking with several institutions. The NHSD TQM Plan identified seven specific phases for implementation (Halder, 1990, (enclosure 6, p. 3)).

1. Top management education in basic TQM and statistical concepts.
2. Initial short term planning for improving quality.
3. Provide training to managers and employees in basic TQM concepts, methods and techniques, and team effectiveness.
4. Initiate initial projects.
5. Long-term planning containing objectives, strategies, and organizational plans.
6. Expand prototype projects.
7. Maintenance using a TQM audit system for local and corporate data and establish a Deming Prize Committee.

The NHSD plan is currently being implemented and is the most advanced of any Navy medical treatment facility (Zentmyer, 1990). The program could be modified and used at NNMC at a much slower pace due to the lack of resources and commitment of NNMC.

Summary.

An abbreviated summary of the key components of the implementation programs reviewed is found in Appendix I. The review of the implementation plans or programs reveals that most of them could be expanded and modified to fit the structure, culture, and requirements of NNMC. However, the dynamics of the NNMC organization indicates

that a customized implementation plan would be the most suitable. Development of a customized program would also be in compliance with the guidance provided by DOD.

IMPLEMENTATION PLAN

The implementation plan presented in this paper is based on the best aspects of the programs reviewed and is designed to take into consideration the requirements of the governing agencies, organizational structure, dynamics, and culture of NNMC.

Plan of Actions and Milestones

The following steps constitute the basic implementation plan.

1. Senior management commitment and education.
2. Select and train a TQM Coordinator.
3. Network with local and national organizations.
4. Establish a TQM organizational structure.
5. Establish short and long range goals.
6. Evaluate and select initial focus areas.
7. Establish and train Project Action Teams (PAT)
8. Market success and expand program.

A proposed timeline to implement the proposed plan is provided as figure 3.

INSERT FIGURE 3

PROPOSED IMPLEMENTATION TIMELINE

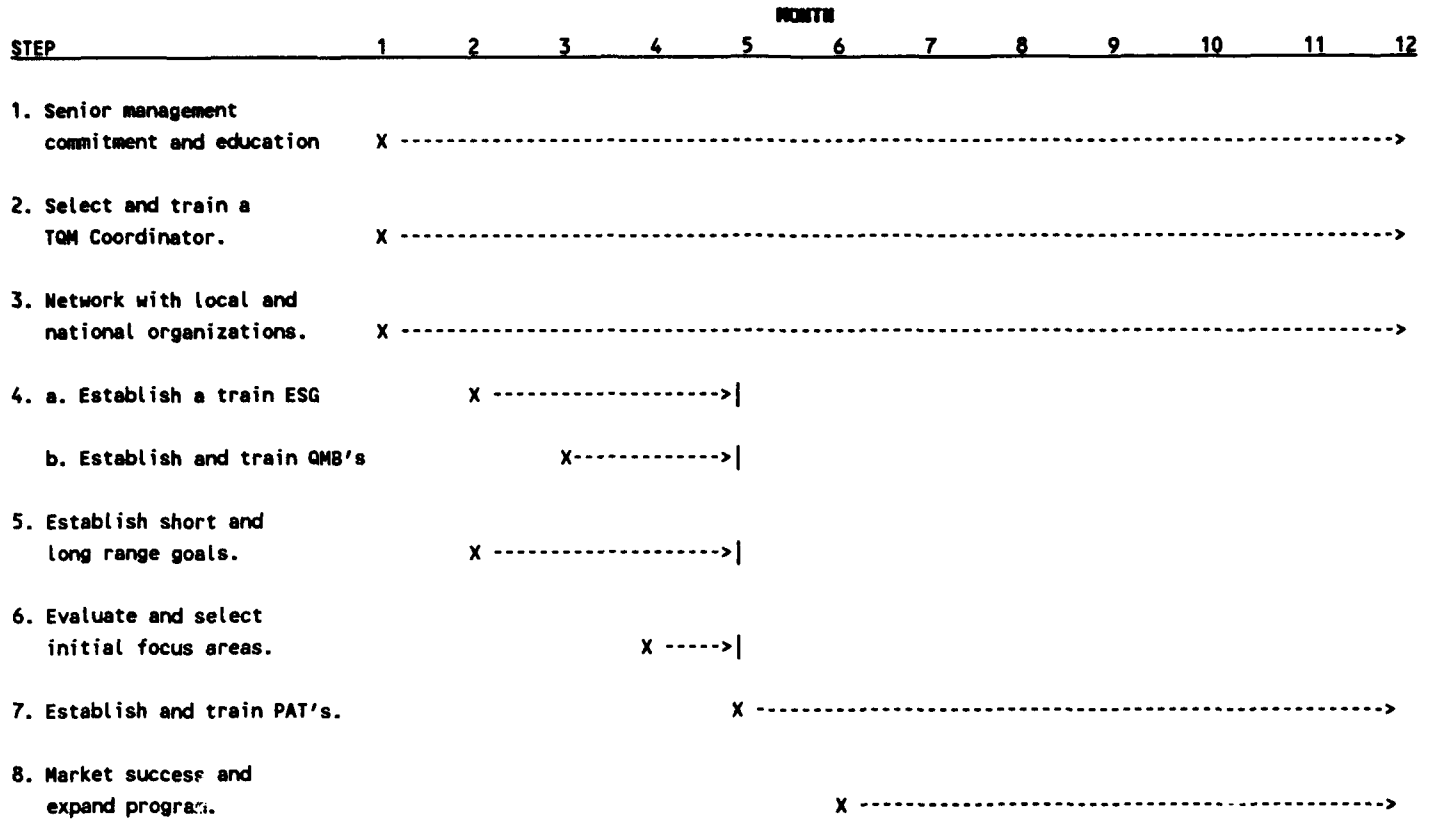


Figure 3

1. Senior management commitment and education.

Commitment of senior management is critical to the success of implementing TQM or any other major change at NNMC. Mediocre commitment will only result in a mediocre program. Deming (1986) believes that support is not enough and that management must act. Without the true commitment the TQM program will fail due to inadequate attention by management and the inability of employees to obtain the support of management to make changes. Senior management at NNMC consist of the Commander, Deputy Commander, Directors, and several special assistants. This group also forms the Executive Council of NNMC which meets on a routine basis to discuss the operations and problems of NNMC.

True commitment by senior management can be demonstrated in several ways including; participation in TQM activities, leading subordinates to improve process, continually referring to the positive attributes of process improvement, removing roadblocks and barriers, requiring the tools of TQM to be used, empowering employees, supporting risk taking, and reallocating resources to support process improvement and the transition to TQM.

The education of senior management is necessary to demonstrate commitment and create an understanding of the new way of conducting business. The education of senior management must impress the importance of quality on an organization, organizational change, the principles of TQM statistical techniques, group dynamics, and problem solving techniques.

Several federally sponsored three to five day seminars are available to educate the senior management. These courses are available locally from Department of Defense activities, the Office of Manpower and Budget, and the Naval School of Health Sciences, Bethesda. In addition to the federally sponsored programs thirteen contracting firms which have been awarded contracts on the Federal Schedule for TQM training (FQI, 1990). However, senior management education is not complete after a three or five day course and must be augmented with selected readings, attendance at meetings and presentations, and other educational tools such as videotapes and attendance at seminars.

How long will be required to establish commitment and educate the senior management will depend on individual leadership abilities, individual background and experience, and available resources. Establishing

commitment must be a primary goal at the beginning of implementation and continue indefinitely. Initial education efforts should be accomplished in a timely manner during the first month of the transition. This rather quick time frame is required to keep everyone moving in the same speed and direction.

2. Select and train a TQM Coordinator.

A TQM Coordinator (TQMC) is a leader who serves as the change advocate, steers the organization through the TQM process, coordinates command level TQM functions, and serves as an advisor throughout the organization. The role of the change agent was researched by Brueland (1986) who identified several critical elements of the change agent which includes; 1) understanding the need for change, 2) understanding the dynamics of the organization, 3) shares a vision and prepares the organization, 4) and serves as the key advisor to senior management.

Johnston (1989) found that selecting a change agent from outside the organization was generally preferred over using someone from inside the organization. Bringing someone from outside the organization provides a new prospective, increases objectivity, and independence from the organizations normal political pressures.

Johnston (1989) surveyed 143 civilian and federal sector TQM organizations in an effort to identify the desired attributes or characteristics for a TQM implementor. He found the desired traits for a federal sector implementor include;

1. Knowledge of quality management theory.
2. Knowledge of the business, organizational competence, knowledge of operations.
3. Motivation and initiative.
4. Effective interpersonal skills.
5. Innovative, imaginative, creative, conceptual ability, and independent mind.
6. Speaking skills, articulate, influential. (p. 79)

Training and education of the TQMC must be obtained from outside an organization which is ready to implement TQM. Many one to two week courses are available from federal and contract agencies. The education will be strengthened by attendance at seminars and networking with existing TQM organizations or support groups.

A critical educational experience for a TQM coordinator from outside the organization is learning the culture and dynamics of the organization. Each organization is unique and cannot be learned from a textbook. The coordinators' education of the organization

must include frequent interactions with the power brokers of the organization as well as attending various meetings within the organization.

The prompt selection of a coordinator who is capable of devoting considerable effort and talents is critical to creating the TQM transition in an organization.

3. Begin Networking with local and national organizations.

A purposeful effort to network with other quality oriented organizations will provide a wealth of information, identify potential pitfalls, and aid the implementation and process of the organization. The TQM coordinator and the Commander should be the primary networkers during the initial phases of implementation. Networking should begin immediately and continue indefinitely.

Local networking opportunities for NNMC include the Navy Medical Department Quality Institute, local Healthcare Management professional associations such as the American Hospital Association (AHA), American Academy of Medical Administrators (AAMA), and the American College of Healthcare Administrators (ACHE). The Office of

Manpower and Budget sponsors a Federal Sector TQM network which meets once a month and provides valuable and timely information and guidance.

Organizations outside the NNMC area which could provide excellent networking opportunities include the Naval Hospital San Diego (NHSD), Hospital Corporation of America (HCA), the Harvard Community Health Plan, National Demonstration Project, and the Naval Personnel Research and Development Center (NPRDC), San Diego.

4. Establish a TQM organizational structure

The literature provides many formal and informal structures for implementing a quality improvement program and uses a variety of names and titles. A predominate TQM structure (NPRDC, 1989; D 1989) uses an executive group comprised of senior management to provide guidance, Quality Management Boards which consist of mid-level management groups which have functional responsibility of a particular area, and Process Improvement Teams composed of managers and workers which work to improve a specific process.

Two critical factors of the structure which will assist with implementation is information sharing, and the melting of the current organization into the TQM structure. The positive flow of information, up and down

the structure, is critical to continued motivation of the various groups. These critical factors are considered throughout the proposed implementation plan.

The proposed structure (figure 4) to support the implementation of TQM at NNMC is a three tiered system comprised of the Executive Steering Group (ESG), Quality Management Boards (QMB) and Project Action Teams (PAT). This structure is in keeping with the guidance provided by DOD and BUMED.

INSERT FIGURE 4

The ESG structure should be established in the second month of implementation and be comprised of the NNMC Executive Council and the TQM Coordinator. Appointments to the ESG should be formalized in writing. A Charter should be used to formalize the functions of the ESG. The Charter should include the following functions: 1) Directing the NNMC TQM effort, 2) Development of a strategic plan, 3) Evaluating and selecting initial focus areas, 4) Providing resources to support quality improvement, and 5) establish guiding principles and a definition of quality for the organization.

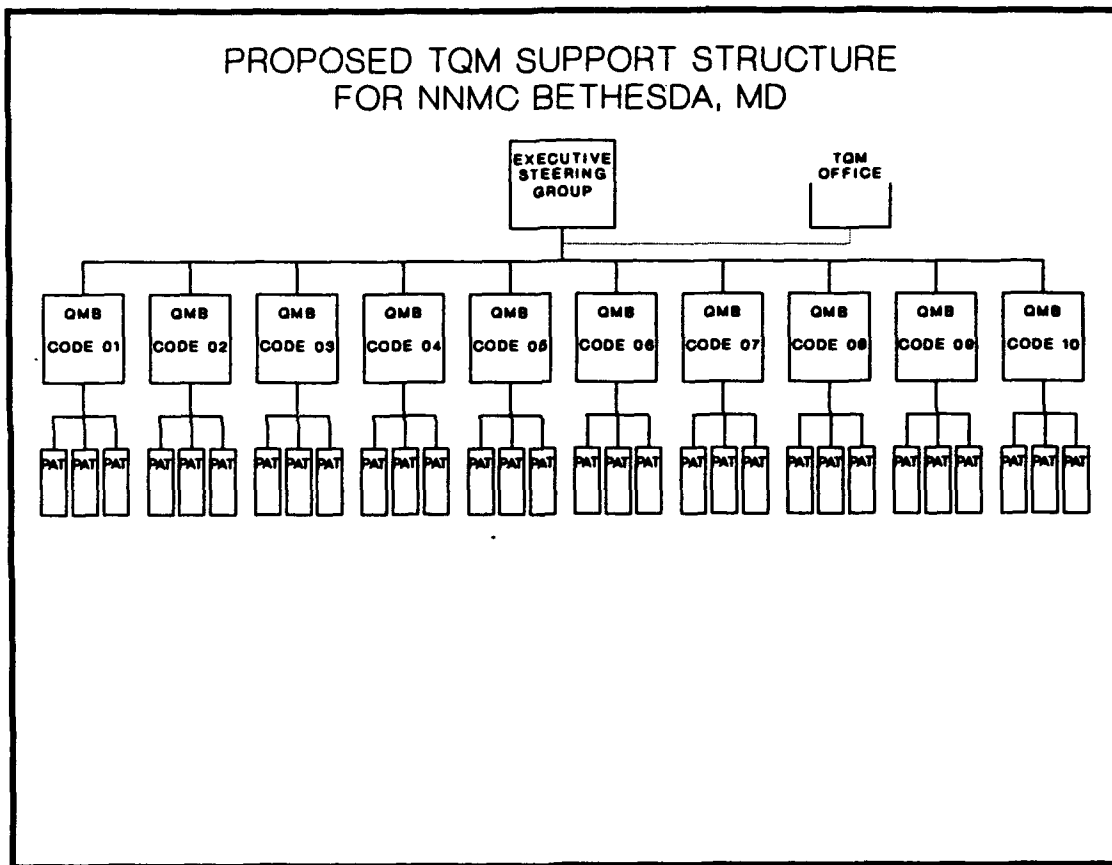


Figure 4

The next level in the TQM structure is the QMB should be established in the third month. QMB's should consist of the Director and Department Heads of the 10 Directorates. The QMB's coordinate TQM efforts within their respective areas. Appointments to the QMB should be in writing and a charter should also be developed.

To assure coordination between the QMB and ESG, the senior member of a QMB should also a member of the ESG. This action will not only improve communications but demonstrate a commitment and understanding of TQM by senior management. Training for the ESG and QMB members should be provided in the first five months of implementation.

The last level of the TQM organizational structure are the Project Action Teams (PAT). PAT's are established by the ESG and QMB to address particular issues. Training for the PAT's begin with the general employee awareness training and is generally best enhanced with specific training once an employee is assigned as a member of a PAT. Establishment of PAT's is not recommended until senior management has had training and a strategic plan is developed.

The development of a structure must be phased in to the organization from the top down. Commitment of senior

management, and available resources will be the constraining factors for implementing the new structure.

5. Establish short and long range goals.

The establishment of guidance which will direct the quality improvement efforts of the organization is required to prevent various groups from traveling divergent courses or duplicating efforts. The development of goals should begin in the second month of implementation to permit the senior management structure to be developed and educated. The goals should be developed by the ESG with consideration given to the guidance provided by Executive Order 12637 (Reagan, 1988), the DON Total Performance Improvement Action Plan (DON, 1988), the Surgeon General, (Zimble, 1990) as well as input from senior management and the functional QMB's.

The short range goals should identify training programs and initial focus areas which will provide the greatest impact to the overall implementation of TQM.

6. Evaluate and select initial focus areas

The determination of what is to be the subject of the initial focus areas should be the responsibility of the ESG. Selection of the initial processes should consider the focus areas which will provide the opportunity for the QMB's and PAT's to learn the new process, is highly

marketable, will be assured success, has leaders in quality improvement available to be members of the PAT, and is highly visible or impacts on a significant number of employees.

Sources of potential initial processes can be obtained from several sources including; the Patient Relations Department who receives patient comments and conducts customer satisfaction surveys (NNMCINST 5420.2A); The Management Control Review Program which has evaluated 114 programs and identified those process in need of managements attention (NNMCINST 5000.2; NNMCINST 5200.2); reports from the Navy and Medical Inspector Generals; the report from the Navy Medical Blue Ribbon Panel (DON, 1988); and the Management Assistance Team Report (Hood, 1989).

7. Establish and train Project Action Team's.

Once the initial processes have been identified PAT's must be selected and trained to perform the process improvement actions. The function of the PAT is to analyze, develop improvement strategies, test the strategies, and make recommendation for change to management for a specific process. A charter and appointment letters should be provided to formally establish and identify the functions and scope of the PAT.

As with the QMB a representative from the next senior group, the QMB, should be assigned to the PAT to assure the flow of information and demonstrate commitment of senior management for TQM.

The size of the PAT should be kept to a minimum, Joiner Institute (Scholtes, 1988) recommends that groups consist of five members although some institutions consider nine members to be acceptable. Who comprises the membership of a PAT will depend on the function, scope, and complexity of the process being analyzed. The composition of the team is critical to success and should contain the owner of the process, representatives from the group which provides the critical inputs to the process, those who work in the process and those who receive the goods or services produced (Scholtes, 1988).

Training of the PAT should be based on the process improvement methodology selected by the ESG. Initial and subsequent training can be provided from internal or external sources depending on the availability of resources. However, initially external facilitators from organizations which have established programs may be preferable and will bring valuable expertise to the organization.

Consideration must be given to redesignating and

restructuring some of the NNMC Committees and Boards to serve as PAT's. Advantages of changing the current structure would be avoiding duplicate efforts, and will demonstrate senior managements commitment to TQM. Consideration should also be given to the informal ad hoc groups which have formed to solve problems in various clinics and departments. An example of such a project was found in the Medicine Directorate where a study to evaluate the possibility of several clinics sharing common resources and cross training personnel to avoid disruption of services during unforeseen absences of key personnel.

8. Market success and expand program

After the initial PAT's have been trained and begin to experiment and identify methods to improve the quality of services it is critical that the information be shared throughout NNMC. This sharing of the work of the PAT' should be a directed effort of the ESG and QMB to market the TQM concept. Marketing mediums are available at NNMC and include the "The Journal", the Plan of the Day published by the Hospital Administration, and through the word of mouth. The marketing effort should begin as soon as possible and continue indefinitely as a normal part of business.

Training Requirements

The training required to support the implementation program can be sorted into three courses; TQM Awareness Seminar, Process improvement and Quantitative Methods, and Group skills and concepts. The TQM Awareness training should be provided to Senior Management, members of the QMB, and then the entire workforce. When the training should occur and who should provide the training must be a part of the strategic plan developed by the ESG.

Process improvement training must also be given to all members of the organization. A basic course should be provided by the TQM Coordinator and selected facilitators for the organization. The training should also be provided to senior management and QMB members as soon as possible. Training individuals assigned to a PAT should be provided before or at the beginning of the PAT.

Group skills and dynamics training should be provided by the TQM coordinator and group facilitators to all PAT leaders and members as an initial requirement for each PAT. Initial training should be contracted in order to establish a cadre of specialist for NNMC who can develop a customized training program.

C. Cost Analysis

An analysis of the cost for the first year of implementing the proposed plan at NNMC is estimated to be \$742,329. The methodology and details of the analysis are provided in Appendix J and a summary of the findings are provided in Table 2. The analysis considered the cost for a full time TQM coordinator and one assistant, meetings of the ESG, basic training requirements for the first calendar year including senior management training and 8 hours of general awareness training for the entire staff, and basic supplies and training materials.

INSERT TABLE 2

Table 2

SUMMARY OF IMPLEMENTATION COSTS

<u>TQM IMPLEMENTATION FUNCTION</u>	<u>ESTIMATED ANNUAL COST</u>
TQM Office salaries	112,633
Executive Steering Group meeting	34,464
Contractor training for senior management	30,820
Employee general awareness training	509,140
TQM staff training	1,000
Networking	0
Quality Management Board meetings	35,748
Equipment and supplies	<u>18,524</u>
<u>Total</u>	\$742,329

Discussion

Alternative approaches

The use of an outside contractor to develop an implementation plan, provide training, and coordinate NNMC's TQM efforts was evaluated as an option. The option was found to be incompatible with the objectives of the Surgeon General's to begin implementation in 1990 since the length of time to execute a major contract and the time required for an outside company to become familiar with the organization would be excessive.

An additional reason for not using outside contractors is the cost of having contractors to oversee the entire implementation. However, sufficient resources should be available to contract from one of the several federal or civilian agencies to provide direction and training for senior management during the initial phases of implementation.

Project Action Team Initiatives

What processes are to be evaluated by the initial PAT's should be determined by the ESG with input from the QMB's. As mentioned earlier several sources to identify opportunities for improvement are available to assist the ESG. An evaluation of various documents and through

personal observations of the organization the following functions or processes could be evaluated:

1. An assessment of the internal organization should be conducted to establish a baseline for evaluating NNM. The DOD Quality and Productivity Self-assessment Guide for Defense Organizations (DOD, 1990) is available at no cost and is an excellent tool to assess the internal culture and climate of the organization. The external customer should also be evaluated utilizing a different customer survey mechanism than is currently being used. These projects should be of the highest priority and will provide critical information from the ESG.

2. A high interest item of many oversight groups is the processing of inpatient medical records. PAT's should be assigned to identify and streamline the process of dictation and the process by which test results are placed in the patients record after discharge.

3. Access to care is a major concern of many oversight groups, the command, and the medical staff. Access to care is a complex subject and can be subdivided into many processes, some of which include; scheduling of patients, routing of consultations, the amount of paperwork a

physician must complete to discharge a patient, and the interface between the clinics and wards with ancillary support areas.

4. Administrative areas which could be addressed include the processing and quality of correspondence, the requisitioning and storage of expendable supplies, processing of medical boards, collection of receivables, and the equitable distribution of personnel assets throughout the command.

It should be noted the Composite Health Care System (CHCS), a new multi function computer system, will impact on many of the concerns of the staff and oversight agencies. Care should be taken to avoid waste and rework by evaluating a process or program which will be completely changed when CHCS begins implementation at NNMCMC in 1991.

Organizational changes

One of the results of implementing TQM should be the streamlining of the organization and the elimination of structures which duplicate functions, waste resources, and reduce productivity. During the organizational assessment several management programs were identified which appear to duplicate functions. These various functions should be identified and action should be taken to reduce as

much duplicity as possible.

One method to reduce duplicity would be to assign a sponsor for command wide information. An example is inpatient workload and information. Currently all inpatients are tracked on the ACQESS computer system which is the responsibility of the Patient Administration Department. Making the Patient Administration Department the sponsor of all patient related information and the sole source of the patient data would eliminate the need for several collection efforts of the same information and could increase the reliability and validity of the information. Other areas this methodology could be applied include Fiscal and Supply functions, personnel management functions, and outpatient administration.

An organizational change which requires further evaluation is the establishment of a Special Assistant to the Commander for Quality Improvement. The Special Assistant should coordinate all quality management and improvement departments which would include the Quality Assurance, Utilization Review, Patient Relations, Management Control Review, and Command Assessment departments. Combining these programs will enable a more concerted effort to improve quality and will reduce many duplication of efforts.

Another significant opportunity for improvement is found in the number and types command Committees and Boards (NNMCINST 5420.2A) that are currently established. Many of the special groups could be eliminated, or have their functions combined with another groups. An in-depth analysis is required which could result in a substantial reduction of the amount of resources expended on meetings and oversight programs.

Conclusions and Recommendations

The time for NNMC to change the way it conducts business is now. NNMC can no longer afford to not address the issue of quality improvement on an organizational wide basis and should implement TQM immediately.

The most significant changes which will occur from adopting TQM philosophies at NNMC will be in the basic culture of the organization and the attitudes of the management and workers. Other more specific changes which NNMC can anticipate include 1) an increase in the use of participative management to solve problems, 2) increased awareness of the customer and a greater concern for meeting the customers needs and desires, 3) an increased frequency of management and employees thinking outside the traditional way of doing business and an increase of creative solutions to long term problems, 4) increased group recognition, 5) increased pride in workmanship as a result of the improved services to the customer, 6) increased satisfaction of employees when roadblocks to innovative procedures are removed, and resources traditionally wasted are used to improve the quality of the work environment, 7) increased customer satisfaction, 8) higher quality care, and 9) increased productivity at a reduced cost through the elimination of waste and rework.

NNMC must truly commit to quality for the long term, change must occur from the top down, the organization must become customer oriented, increase the use statistical techniques to focus on process variation and control, discontinue the use of outcome orientated inspection and numerical quotas, use of participative management to solve process problems, provide training and retraining to all employees to ensure they understand their jobs and how to improve them, improve organizational communications, and strive to provide the highest quality work at all times in all levels of the organization.

Making a true commitment to implementing the philosophies and principles TQM at NNMC is a major undertaking which will require behavior changes from most of the employees and the allocation of significant resources. The benefits NNMC can obtain from incorporating the principles, philosophies, tools, and techniques of TQM into the organization will far outweigh any expectations and will be the key to growth and survival in the future.

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Appendix A

NNMC FY 90 Goals

NNMC

FY 90 GOALS

- I ENGENDER TQM CULTURE TO 'DELIGHT' OUR CUSTOMERS.**
- II FIX AMBULATORY CARE SYSTEM.
 MAINTAIN AND INCREASE ACCESS.**
- III MAINTAIN CURRENT INPATIENT CARE OPERATIONAL LEVEL.
 REFINE AND INSTITUTE PERFORMANCE MEASURES.**
- IV REBUILD OCCUPATIONAL HEALTH PROGRAM.**
- V CORRECT COMMAND WORKLOAD DATA COLLECTION.
 REVIEW CIVILIAN/MILITARY POSITIONS & REQUIREMENTS.**
- VI SUPPORT/MAINTAIN ACCREDITATION OF TRAINING PROGRAMS.**
- VII ESTABLISH THE CENTRAL HIV PROGRAM.**
- VIII REVIEW NEW OR EXPANDED PROGRAM PROPOSALS.**

Appendix B

Cost Analysis of Quality Management at NNMC

THE COST OF QUALITY MANAGEMENT AT NNMC

An evaluation of the current programs which monitor quality, measure outcomes, inspect services or performance, and provide review or oversight was conducted. Through a review of the literature and interviews with the Deputy Comptroller, Director for Administration, and the Director for Quality Assurance eleven programs were identified as quality oversight activities. The cost to provide the function and programs were calculated. The methodology and results of the study are provided below.

SUMMARY

<u>QUALITY FUNCTION</u>	<u>ANNUAL COST</u>
A. Command Quality Assurance Program	1,017,135
B. Nursing Quality Assurance Office	237,762
C. Maryland Quality Assessment Program	1,500
D. JCAHO inspection	13,860
E. Command Inspection, Control, and Review Office	181,532
F. Executive Committee of the Medical Staff	39,602
G. Planning Office Measures of Effectiveness Program	294,815
H. Equal Employment Office	36,972
I. Safety Office	65,624
J. Patient Relations Office	122,491
K. Medical Record Peer Review Program	87,066
TOTAL	1,884,513

Appendix B

METHODOLOGIES

Many of the offices or functions also serve other functions which are not related to the identified quality programs. Through interviews an assessment was completed to identify the percentage of resources which are devoted to the Quality programs. Most programs were assessed to use 100% of resources in support of quality. The Planning office was assessed at 75% while the Equal Opportunity and Safety offices were assessed at 50%.

The labor cost were determined using the following methodologies:

1. Military Basic Pay: Military basic pay was calculated by using the NAVCOMPTNOTE 7041 of 9 NOV 1989, Navy Composite Standard Military Rate Table, attachment (1). The table provides an average of all costs associated with employment for each pay grade.
2. Special Medical Officer Pay: Medical Officer special pays are a significant cost for employing medical officers. Special pays and allowances include the Medical Officer Retention Bonus (MORB), Incentive Specialty Pay (ISP), Board Certification Pay (BCP), and Chairman Pay (CP) were allocated to the medical officers by position and pay grade. Special pays are calculated using pay grade, position, and time of service. The references used to calculate the pays include; ISP - CNO Washington, message 041425Z OCT 87, NAVOP 119/89, BCP - SECNAVINST 7220.75B of 23 SEPT 83, pg. 5, MORB - SECNAV Washington, D. C. message 261738Z Jan 90, CP- PAYPERSMAN.
3. Civilian pay: Civilian pay was calculated by using the individual's actual hourly cost which was obtained from the NNMC Fiscal Office.
4. Indirect costs: The indirect costs are based on Fiscal Year 90 budget estimates obtained from the NNMC Fiscal Office.

RESULTS

A. Command Quality Assurance:

1. Command Quality Assurance Office:

a. The NNMC Quality Assurance (QA) Office reports directly to the Commander and is responsible for the implementation and oversight of the command QA program. The department has oversight responsibility for Quality Assurance, Risk Management, Utilization Review Infection Control program, and the Safety Committee (NNMCINST 5450.1). The costs include supplies, direct labor for the full time QA department staff, departmental monthly QA meetings, the review of QA documents by the senior management, Command level QA meeting meetings, and Medical Records Committee.

1. Supplies: FY90 est. \$1,900

2. Direct Labor Cost QA Dept.:

Military:

06 -105,190

05 - 97,157

04 - 75,548

\$277,895

Civilians (13):

\$ 1,316/day

x 260 working days

\$342,160

b. Total = \$621,955

2. Departmental QA meetings:

a. The NNMC QA program requires that periodic department meetings be conducted to assess the quality of the services provided. A review of the QA meeting reports revealed that 48 clinical and administrative departments were conducting the required meetings. To ascertain the approximate cost of these meetings a review of the meeting attendance list for the 1990 QA meetings was conducted. The cost of each staff member was then calculated using the methodologies identified above. Additionally, an estimate for duplicating the reports and clerical support for the meetings was conducted.

b. The estimated annual direct labor cost for the departmental meetings which support the QA Program is identified below.

DEPARTMENT	ANNUAL LABOR COST
Allergy	1,856.23
Ancillary	5,740.70
Anesthesia	11,034.90
Community Health	5,948.76
Cardiology	3,900.24
Coronary Care Unit	3,640.68
Critical Care	1,900.32
Cardio/Thoracic Surgery	2,091.48
Dental	8,943.27
Dermatology	6,069.84
Emergency Medicine	26,169.60
Endocrinology	2,596.20
Food Management	1,757.16
Gastroenterology	5,667.00
General Medicine	1,941.96
Hematology/Oncology	5,322.24
Infectious Disease	6,952.80
Internal Medicine	2,283.12
Laboratory Medicine	10,751.88
Management Information	5,869.08
Material Management	2,347.80
Military Medicine	9,174.78
Nephrology	2,327.68
Neurosurgery	8,490.24
Neurology	5,015.25
Nursing	31,291.50
OB/GYN	30,940.08
Occupational Health	8,556.30
Opthamology	6,774.12
Ortolaryngology	5,280.00
Pastoral Care	3,612.96
Patient Administration	3,829.44
Pediatrics	12,000.36
Pharmacy	6,472.68
Physical/Occupational Therapy	5,159.88
Procurement	2,611.32
Psychiatry	15,869.70
Psychology	2,928.84
Pulmonary Medicine	5,695.68
Radiology	5,743.92
Rheumatology	3,566.64
Staff Education ad Training	2,297.25
Social Services	1,856.28
Surgical Services	12,114.48
Surgical Directorate	20,001.30
Urology	3,210.72
TOTAL	\$337,606.66

c. An additional cost for conducting the meetings include duplicating the monthly reports which averaged 10 pages x 48 departments x \$.07 per page = \$33.60/mo. x 12 months = \$403.20

d. Through the use of interviews and a documental review it was determined that the clerical support for the meetings average two hrs/mo and the average department clerical cost was \$10.00/hr.

$\$10.00 \times 2 \text{ hrs} \times 48 \text{ depts} = \$960/\text{mo} \times 12 \text{ mo.} = \$11,520/\text{yr.}$

e. Total (b,c,d) = \$349,529.86

3. Document Review by Senior Management:

a. Review of department minutes by the Deputy Commander.

$5 \text{ min.} \times 48 \text{ departments} = 240 \text{ min} = 4 \text{ hrs/mo}$
 $\times 50.57/\text{hr} = 202.28 \times 12 \text{ mo.} = \$2,427.36/\text{yr.}$

b. Review of the department minutes by the Commander:

$5 \text{ min.} \times 48 \text{ departments} = 240 \text{ min} = 4 \text{ hrs/mo}$
 $\times 63.02/\text{hr} = \$252.08/\text{mo} \times 12 = \$3,024.96$

c. Total= \$5,452.32

4. Command QA meetings:

a. Quality Assurance Committee Meeting:

$\text{Salary of Members} = \$659.90/\text{hr.} \times 1.0 \text{ hrs/mo} \times 12 \text{ mo.} = \$7,918.80/\text{yr.}$

b. Clerical Support for the QA Committee Meeting

$\text{Clerical wage} = \$12.15 \times 2 \text{ hr.} = \$ 24.30 \times 12$
 $= \$ 291.60$

c. Quarterly Command Safety Policy Committee meeting:

$\text{Salary of Members} = \$1,399.30 \times 1.0 \text{ hrs} = \$1,399.30$
 $\times 4 \text{ months} = \$5,597.20$

d. Clerical Support for the Safety Committee Meeting
(Actual cost)

Clerical wage = \$12.15 x 2 hr. = \$ 24.30 x 12 =
\$ 291.60

e. Infection Control Committee

Salary of the members = \$511.11 x 1.0 hrs =
\$ 511.11/mo x 12 = \$6,133.32

f. Clerical Support for the Infection Control
Committee Meeting

Clerical wage = \$12.15 x 2 hr. = \$ 24.30 x 12
= \$ 291.60

g. Quarterly Radiation Safety Committee Meeting

Salary of members = \$532.68 x 1.25 hrs/mo =
\$665.85/mo x 4 = \$2,663.40

h. Total = \$23,187.52

5. Medical Records Committee (MRC)

a. The MRC is tasked by NNMC Instruction 6000.3 to supervise the timely completion, adequacy and quality of inpatient and out patient medical records. The Committee meets an average of 2 hrs. and 45 min each month.

Salary of Members = \$515.47/hr x 2.75 hrs =
\$1,417.54/mo x 12 = \$17,010.51/yr

b. Total = \$17,010.51

QUALITY ASSURANCE SUMMARY

1. QA Office	\$621,955.00
2. Dept meetings (48/mo)	\$349,529.86
3. Senior Management Review	\$5,452.32
4. Monthly Command level QA meetings	\$23,187.52
5. Medical Records Committee	<u>\$17,010.51</u>
TOTAL	\$1,017,135.21

B. Nursing Directorate Quality Assurance Department

1. The Nursing Directorate QA office coordinates all nursing QA issues and reports them to Command QA Department through the Director of Nursing (NNMCINST 5450.1). Direct labor expenditures were the only cost allocated to this function.

a. Military Salaries:

05 = \$89,157
E4 = \$25,530
TOTAL= \$114,687/yr

b. Department Meetings:

a. The department meetings in the Nursing Directorate serve the same function as the meetings identified in the QA Office. It was noted that a much larger number of enlisted personnel participated in the meeting and that several departments conducted biweekly meetings.

<u>DEPARTMENT</u>	<u>ANNUAL LABOR COST</u>
Coronary Care	3,451.68
Ambulatory Care	1,287.30
Recovery Room	2,656.80
ICU	6,727.56
CT/ICU	2,642.64
Nursery	6,954.12
Newborn Nursery ICU	6,160.56
Labor and Delivery	4,467.60
Perinatal	2,933.28
7 East	3,980.16
7 West	9,797.04
6 East	18,621.00
6 West	2,875.41
Neuro ICU	842.08
4 West	13,752.80
5 West	17,540.10
5 East	4,343.28
NP-6	6,212.40
Admin Counsel QA Meeting	5,263.80
3 West	2,564.88
TOTAL	\$109,321.69

** 20 Departments surveyed spent 23 hrs 55 min/month with 404 persons attending meetings each month.

4. Total (a+b) = \$237,761.50

C. Maryland Quality Assessment Program:

1. The Maryland quality Assessment Program provides quality managers with an assessment tool which is used to compare the performance of the health care providers of NNMC with the providers in the state of MD. The analysis is conducted in the Command QA office.

Annual Fee = \$1,500

D. Joint Commission on Accreditation of Healthcare Organizations (JCAHO) Inspection:

1. The command obtains certification from JCAHO every three years to access the appropriateness and quality of the organization's services. The 1989 command inspection cost of \$42,000 and was the only cost that could be documented although significant resources were expended in preparation for the inspection.

$\$42,000 / 3 \text{ years} = \$14,000/\text{annual cost}$

E. Command Inspection, Control and Review Office:

1. The Command Inspection, Control, and Review Office provides the command an independent means to monitor the posture of the organization. The office inspects for improprieties which impact on the operation of the command, and evaluate the operation of the command to assure safeguards are in place to prevent waste, fraud, and abuse (NNMCINST 5450.1). The costs associated with the office are the direct civilian labor costs and the program cost for conducting Management Control Reviews.

2. Military labor = NONE

3. Civilian Labor = \$ 681.76/day x 260 work days =
\$177,257.60

4. Program Costs:

a. Currently the Management Control Review (MCR) program monitors 114 programs which require evaluation every five years. It was estimated by a management analyst the average review takes 1.75 hours and is conducted by a junior officer of the grade 02.

114 programs
x .20
23 annual reviews
x 8 hrs.
184 hrs.
x \$23.23 (.02/hr)
\$4,274.32/yr.

5. Summary

Civilian Pay:	\$ 177,257.60
Program Costs:	\$ 4,274.32
TOTAL	\$ 181,531.92

F. Executive Committee of the Medical Staff:

1. The Executive Committee of the Medical Staff (ECMS) is a group of 12 staff physicians who meet weekly to provide oversight for the quality of medical care provided by the command (NNMCINST 5450.1). The costs associated with the committees operation are based on the salaries of the members and clerical support required to support committee. The average meeting last for 1 hour.

a. Military Labor:

\$759.56/hr x 1.0 hr x 50 weeks = \$37,978.00

b. Clerical Support:

\$16.23 hr. x 2 hrs = \$32.46 x 50 meetings =
\$1,623.00/yr.

2. Summary

Military Labor	\$ 37,978.50
Clerical Support	\$ 1,623.00
TOTAL	\$ 39,601.50

G. Planning Office and Measures of Effectiveness Program

1. The Planning Department coordinates and monitors the attainment of command plans and goals for the delivery of healthcare (NNMCINST 5450.1). In order to accomplish the monitoring function the office established the Measures of Effectiveness Program (MOE) which is a monthly reporting requirement for each department at NNMC. The Planning Office uses the inputs to coordinate, review, and prepare reports on the productivity, effectiveness, and overall performance of the organization. The estimated cost of the MOE program includes approximately 75% of all military and civilian labor costs for the Planning Office, a monthly meeting of the Executive Counsel, Directorate staff time, and Department staff time and the report duplication costs.

2. Military Labor:

06 =	105,190
04 =	75,548
03 =	64,335
E6 =	37,085
Total=	\$282,158/yr
	<u>x .75</u>
	\$211,618.50/yr

3. Civilian labor:

\$192.00	/day
x	260 work days
\$49,920.00	
	<u>x .75</u>
\$37,440.00	

4. Monthly Executive Council MOE meeting:

\$ 635.12	Salary cost/hr.
	<u>x 2.0 hours/mo</u>
\$1,270.24	
	<u>x 12 months</u>
\$15,242.88	

5. Directorate MOE preparation staff time

a. The Directorate level staff time according to several informal interviews is approximately one hour per month. The average staffer is an O2 Medical Service Corps Officer.

\$23.77	O2 hourly rate
	<u>x 10</u> Directorates
\$237.70	
	<u>x 12</u> months
\$2,852.40	

6. Department Staff Time:

a. The Department staff time is based on the average staffer of an O3 Medical Department Officer who require one hour each month to prepare the required reports.

\$30.93 03 hourly rate
 x 70 Departments
\$2,166
 x 12 Months
\$25,981

7. Monthly report duplication costs

It is estimated by the Planning Office that each months report is approximately 100 pages.

100 pages
x 20 copies
2000
 x .07 per page
\$140.00/mo
 x 12
\$1,680/ yr

8. Planning Office Annual Summary

Military Labor costs	211,618.50
Civilian Labor Costs	37,440.00
Executive Council	15,242.88
Directorate Staffing	2,852.40
Department Staffing	25,981.20
Duplication cost	<u>1,680.00</u>
Total	\$294,814.98

H. Equal Employment Opportunities Office (EEO)

1. The EEO Office is tasked with oversight of the command Affirmative Action and special emphasis programs (NNMCINST 5450.1). It is been estimated that 50% of EEO staff time is devoted to the monitoring indicators which measure the quality of the command's EEO programs. The only significant cost identified is the direct civilian labor costs.

2. Civilian Labor
\$ 284.40 / day
x 260 work days
\$73,944.00
x .50
\$39,972.00

I. Safety Office

1. The function of the Safety Office is to monitor the quality of the command safety programs (NNMCINST 5450.1). Inspection and monitoring the quality of the programs requires approximately 50% of the departments resources. Civilian labor costs were the only significant expense identified.

2. Civilian labor:
\$ 504.80 /day
x 260 work days
\$131,248.00
x .50
\$ 65,624.00

J. Patient Relations Office

1. The Patient Relations Office serves as an advocate for patients and is the central point of contact for positive and negative feedback from customers concerning the quality of services at NNMC. The office also conducts customer satisfaction surveys (NNMCINST 5450.4, 1990).

2. Military labor:
LCDR, MSC x 1 = \$36.32/hr
3. Civilian labor:
(2) employees = \$22.57/hr
Total Hourly wage = \$58.89 x 2080 hours/yr
4. Total = \$122,491.00/year

K. Medical Record Review Process

1. The Medical Record Review Process is a QA function which monitors the quality of care and the documentation of care provided through the use of a peer review process. Evaluations are conducted on 5-10 percent of all active outpatient and inpatient medical records. Reviews for Nursing Service are conducted by charge nurses who are typically in pay grade 04 and the average monthly workload is 123 records. The review of records for medical care are typically conducted by 04 medical officers and the average monthly workload is 1540.5 records. According to the Head, Quality Assurance Office each review takes approximately five minutes.

2. Nursing review

$123 \text{ records/mo} \times 5 \text{ min/record} = 615 \text{ min./60 min} =$
 $10.25 \text{ hrs/mo} \times \$36.32(04, NC) = \$372.28/\text{mo} \times 12 =$
 $\$4,467.36$

3. Medical review

$1540.5 \text{ records/mo} \times 5 \text{ min.} = 7,702.5 \text{ min./60 min.} =$
 $128.37 \text{ hrs/mo} \times \$53.62(04, MC)/\text{hr} = \$6,883.20/\text{mo} \times 12$
 $= \$82,598.38$

4. Total (a+b) = \$87,065.74

Appendix C

DOD Posture on Quality



THE SECRETARY OF DEFENSE
WASHINGTON, THE DISTRICT OF COLUMBIA



DoD POSTURE ON QUALITY

- *Quality is absolutely vital to our defense, and requires a commitment to continuous improvement by all DoD personnel.*
- *A quality and productivity oriented Defense Industry with its underlying industrial base is the key to our ability to maintain a superior level of readiness.*
- *Sustained DoD wide emphasis and concern with respect to high quality and productivity must be an integral part of our daily activities.*
- *Quality improvement is a key to productivity improvement and must be pursued with the necessary resources to produce tangible benefits.*
- *Technology, being one of our greatest assets, must be widely used to improve continuously the quality of Defense systems, equipments and services.*
- *Emphasis must change from relying on inspection, to designing and building quality into the process and product.*
- *Quality must be a key element of competition.*
- *Acquisition strategies must include requirements for continuous improvement of quality and reduced ownership costs.*
- *Managers and personnel at all levels must take responsibility for the quality of their efforts.*
- *Competent, dedicated employees make the greatest contributions to quality and productivity. They must be recognized and rewarded accordingly.*
- *Quality concepts must be ingrained throughout every organization with the proper training at each level, starting with top management.*
- *Principles of quality improvement must involve all personnel and products, including the generation of products in paper and data form.*

Paul Gilman

Appendix D

Navy Medical Department Guiding Principles

Navy Medical Department Guiding Principles

WE ARE the Medical Department of the United States Navy.

WE EXIST to ensure the best physical and mental health of the men and women of the United States Navy and Marine Corps.

WE WILL

Support the combat readiness of the Navy and Marine Corps.

Care for all persons as unique human beings worthy of our courtesy, compassion and respect.

Earn the trust and confidence of our patients by enthusiastically providing prompt access to quality health care.

Attend to the medical needs of the families of our active duty members, our retirees and their families, whenever we are able, for just as the family supports the force, so must we support the family.

Teach, for it is through education that we build the foundation for our future.

Continuously Improve in all aspects of our enterprise.

WE CARE for each other just as we care for our patients. This is the basis of the teamwork and trust that must exist for us to succeed.

WE ARE STANDING BY AND ARE ALWAYS READY TO ASSIST.

Appendix E

Navy Medical Department Quality Essentials

Navy Medical Department Quality Essentials

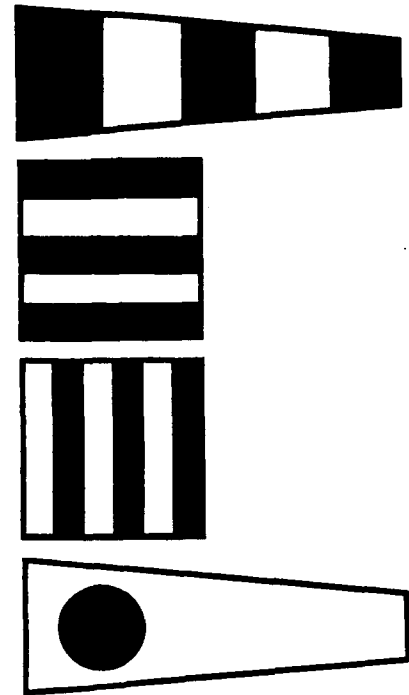
WE ARE	the Medical Department of the United States Navy
CUSTOMER NEEDS	We will meet the customer's needs. Our goal is to delight our customers.
SUPPLIERS	We will form relationships with suppliers who continually strive to achieve the utmost in quality products and services.
CONTINUOUS IMPROVEMENT	We will continually focus on improving our processes, never being satisfied with the status quo or less than optimal services. We will do it right the first time.
MANAGEMENT BY DATA	We will exercise management by fact, using statistically valid data collection and analysis to monitor our processes and progress towards achieving and exceeding quality standards.
TRAINING	We will continually train our people in the specifics of their jobs and in their roles in improving what they do.
PARTICIPATION	Every person in the organization will be empowered to contribute actively to quality improvement efforts.
INNOVATION	We will foster an environment in which suggestions for improvement and innovation are solicited, implemented whenever possible, shared, and applauded.
PROFESSIONAL GROWTH	Every person will have full opportunity to develop and grow within the organization and in his or her chosen profession.
RECOGNITION	We will recognize and reward team accomplishments in continuously improving our enterprise.

WE ARE STANDING BY AND ARE ALWAYS READY TO ASSIST.

Appendix F

Navy Medical Department Vision

Navy Medical Department Vision



We are the Medical Department of the United States Navy.

We are committed to providing an environment of healthcare excellence in which:

All entrusted to our care proudly view Navy Medicine as their preferred source for healthcare.

Healthcare professionals view Navy Medicine as a superior arena for realizing their professional growth and satisfaction.

Healthcare organizations view the Navy Medical Department as a paradigm of excellence.

Fleet and field commanders view Navy Medicine as fully capable of providing optimal, timely, and comprehensive healthcare to their sailors and marines worldwide in peace and war.

Our people view themselves as empowered members of the world's finest healthcare team.

We are standing by and will always be ready to assist.

Appendix G

Proposed FY90 BUMED Goals

PROPOSED FY-90 BUMED GOALS

- **IMPLEMENT BRP/SMB ACTION ITEMS**
- **ENHANCE GRADUATE MEDICAL EDUCATION**
- **FOSTER LEADERSHIP SKILLS**
- **IMPROVE ACCESS TO MANAGED CARE**
- **SUSTAIN & IMPROVE MEDICAL READINESS**
- **ENCOURAGE INNOVATIVE PERFORMANCE**

-
- **ENGENDER TQM TO DELIGHT CUSTOMERS**

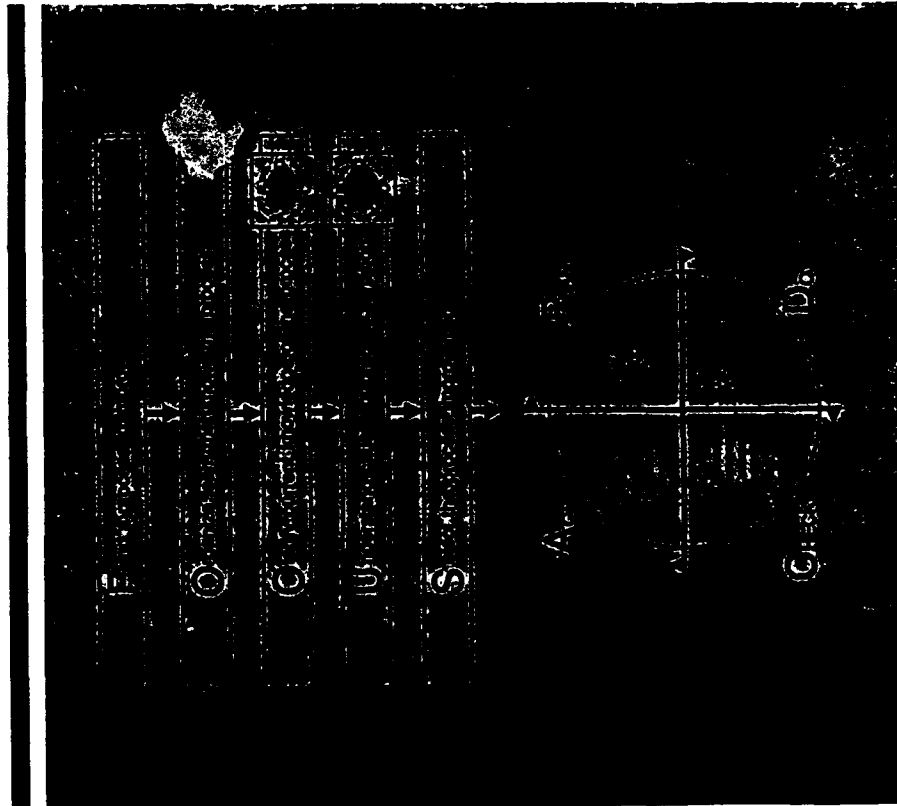
Appendix H

Hospital Wide Improvement Process, FOCUS-PDCA

HOSPITALWIDE QUALITY IMPROVEMENT PROCESSSM

STRATEGY FOR IMPROVEMENT

FOCUS-PDCASM



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Glossary

Boundary — The portion of a process from a Supplier to a Customer that will be the focus of the process improvement.

Coach — A key resource person from within the hospital who will support the CEO's leadership of the HQIP. A respected peer from the hospital work force who is enthusiastic and knowledgeable about HQIP; eager to learn and eager to help others learn.

Common Causes — Causes of variation that are inherent in the process hour after hour, day after day, and affect every occurrence of the process.

Customer — The receiver of an output of a process, either internal or external to a hospital or corporate unit. A customer could be a person, a department, a company, etc.

Hospitalwide Quality Improvement ProcessSM (HQIP) — The application of the New Quality Technology in the day-to-day operation and management of a hospital or healthcare organization. The insights of Dr. W. Edwards Deming, Dr. Joseph M. Juran, Dr. Kaoru Ishikawa, Professor Shigeru Mizuno, and others form the basis for this transformation.

Key Quality Characteristics — Aspects of a process that have the greatest impact on whether the customer's needs and expectations are met. Key Quality Characteristics, or KQCs, are determined by combining knowledge about what is important to the customer with knowledge of the process.

Operational Definition — A description in quantifiable terms of what to measure and the steps to follow to consistently measure it. An Operational Definition is developed for each Key Quality Characteristic before data is collected.

Opportunity Statement — A concise description of a process in need of improvement, its boundaries, and the general area of concern where a Quality Improvement Team should begin its efforts.

Outcome — The degree to which outputs meet the needs and expectations of customers. Customers judge the outputs of a process, and that linkage of customer values and process outputs is called an Outcome.

Owner — The person who has responsibility and authority to continually improve the inputs, actions, and outputs of the process.

Process Improvement — The continuous endeavor to learn about all aspects of a process and to use this knowledge to change the process to reduce variation and complexity and to improve customer judgments of quality. Process improvement begins by understanding how customers judge quality, how processes work, and how understanding the variation in those processes can lead to wise management action.

Process — The transformation of inputs provided by suppliers to outputs received by customers through a series of repeated actions. Customers judge the outputs of a process, and that linkage of customer values and process outputs is called an Outcome. A hospital is a network of processes.

Process Variation — The spread of process output over time. There is variation in every process, and all variation is caused. The causes are of two types — special or common. A process can have both types of variation at the same time or only common cause variation. The management action necessary to improve the process is very different in each situation.

Rework — The act of doing something again because it was not done right the first time. It can occur for a variety of reasons, including insufficient planning, failure of a customer to specify the needed input, and failure of a supplier to provide a consistently high quality output.

Special Causes — Causes that are not in the process all the time or do not affect every occurrence but arise because of special circumstances.

Sponsor — The person or group of people responsible for making the business decision that improving the process is important enough to provide team members and a Coach/facilitator adequate time and resources to work on the improvement. The Sponsor is most often a department manager or the Quality Improvement Council.

Teams

Cross-functional — A group of usually five to eight people from two or more areas of the hospital who are addressing an issue which impacts the operations of each area. For example, the processes of distributing laboratory results might be addressed by a team involving lab, nursing, and medical staff.

Functional — A group of usually five to eight people addressing an issue where any recommended changes would not be likely to affect people outside the specific area. For example, a Functional Team concerned with filing and retrieving data in the laboratory might consist just of people who work in the lab.



Hospital Corporation of America
Quality Resource Group
One Park Plaza
Nashville, Tennessee 37202
(615) 337-9531

Find a process to improve

1. Why does this process represent an opportunity for improvement?
2. How does the improvement of this process meet the strategic objectives of our hospital?
3. Is there a clear owner of the process?
4. What is the clear, simple description of the process improvement opportunity?
5. How does the description link with our definition of quality?
6. Who is the sponsor of this quality improvement effort?

Organize a team that knows the process

1. Is there representation from people who work in the process, including both internal suppliers and internal customers?
2. Are the employees who work closest to the customer part of the team?
3. Is the present owner of the process on the team?
4. Who is the coach/facilitator that will provide technical guidance and educational assistance to the team?

Clarify current knowledge of the process

1. What are the boundaries of the process?
2. Are we trying to improve a system of processes or just one?
3. How should the scope of the improvement effort be narrowed?
4. What is the actual flow of the process?
5. Where is there needless complexity or redundancy in the process?
6. Should it be eliminated before proceeding? If so, how should we use PDCA to change the process?
7. Is there agreement on the "best" way for the process to work based upon current knowledge? If so, how should we use PDCA with emphasis on training everyone in the best process?
8. Based on what we now know, what refinements to our original description of the opportunity for improvement and team membership are now necessary?

Understand causes of process variation

1. What are the measurable characteristics of the process that reflect the customer needs and expectations and allow us to know the process is meeting those needs and expectations? How did we involve the customer of the process in determining the Key Quality Characteristics, or KQCs?
2. What is the plan to consistently measure the KQCs over time? Does it include operational definitions?
3. Do the data collected on the KQCs indicate the presence of any special causes of variation in the process? If so, how should we use the PDCA cycle to eliminate them and prevent them from recurring?
4. If the data collected on the KQCs indicate only common cause variation, what is the cause and effect relationship over time between the causes of variation and the KQCs?
5. Which of these causes of variation can we change to improve the process?
6. Have we identified the common causes of process variation with the greatest affect on the KQCs?

Select the process improvement

1. In what ways can the process be improved based upon our knowledge of the common causes of process variation?
2. Which change to the process represents the most feasible improvement?
3. What is the clear, simple description of the proposed process improvement?

Plan the improvement and continued data collection

1. Who, what, when, where and how will this improvement be made?
2. How should we pilot the change?
3. In addition to the KQCs, what other data should we plan to collect? Why?

Do the improvement, data collection and analysis

Check the results and lessons learned from the team effort

1. Did the process improve as expected? Did it improve from the customer's point of view?
2. What aspects of the team effort went well?
3. How could the team effort be improved?

Act to hold the gain and to continue to improve the process

1. What parts of the improved process need to be standardized?
2. What policies and procedures need to be revised?
3. Who needs to be trained?
4. Who needs to be made aware of the change?
5. What will be measured to ensure that the gain is held?
6. How can the knowledge acquired during this improvement effort be used?
7. Based on our new knowledge, should the owner of this process change?
8. What are the next steps for the continuous improvement of this process?

Appendix I

Survey of TQM Implementation Strategies

SURVEY OF TOTAL QUALITY MANAGEMENT IMPLEMENTATION GUIDELINES

DDP	ECA	JURAN	HCMP	JOHNER	CROSBY	FISD
1. Establish TQM Environment & Culture	1. Establish commitment of senior management	1. Establish need	1. CEO training	1. Educate top management	1. Management commitment	1. Educate top management
2. Define mission of each component	2. Educate senior management	2. Organize QI Council (QIC)	2. Senior Management commitment	2. Develop a strategy	2. Establish QI Teams	2. Short term planning
3. Set performance improvement opportunities goals & priorities	3. Establish a QI Council	3. QIC determines projects	3. Select TQM Coordinator	3. Network	3. Determine what is quality and find quality measures	3. Train managers and employees
4. Establish improvement projects and action plans	4. Begin Project Action Teams	4. Identify and train Project Action Teams	4. Network with other organizations	4. Change the culture	4. Estimate costs of current quality efforts	4. Initiate projects
5. Implement projects			5. Train upper management	5. Train all employees	5. Employee quality awareness training	5. Long term planning
6. Evaluate projects			6. Establish Executive Steering Committee (ESC) and develop a plan	6. Select improvement projects	6. Take corrective actions	6. Expand projects
7. Review and return to #2			7. ESC selects first project		7. Establish 0 defects Committee	7. Maintain projects
8. Employee training			8. Employee training and more projects		8. Train managers	
					9. Have a ZERO DEFECTS Day	
					10. Set goals	
					11. Error cause removal	
					12. Recognition	
					13. Establish Quality Councils	
					14. Do it again	

Appendix J

Cost Analysis for Proposed Implementation Plan

THE COST OF IMPLEMENTING TQM AT NNMC

An evaluation to estimate the costs associated with the first year of implementing the philosophies and principles of TQM into the National Naval Medical Center, Bethesda, MD was conducted. Through a review of the literature and interviews with various organizations 8 major expenses were identified and evaluated. The methodologies for determining the costs of salaries and expenses directly related to implementation are provided.

SUMMARY

<u>TQM IMPLEMENTATION FUNCTION</u>	<u>ESTIMATED ANNUAL COST</u>
TQM Office salaries	112,633
TQM staff training	1,000
Executive Steering Group meeting	34,464
Contractor training for senior management	30,820
Employee general awareness training	509,140
Networking	0
Quality Management Board meetings	35,748
Equipment and supplies	<u>18,524</u>
<u>Total</u>	<u>\$742,329</u>

Appendix J

METHODOLOGIES

Labor cost were determined using the following methodologies:

1. **Military Basic Pay:** Military basic pay was calculated by using the NAVCOMPTNOTE 7041 of 9 NOV 1989, Navy Composite Standard Military Rate Table, attachment (1). The table provides an average of all costs associated with employment for each pay grade.
2. **Special Medical Officer Pay:** Medical Officer special pays are a significant cost for employing medical officers. Special pays and allowances include the Medical Officer Retention Bonus (MORB), Incentive Specialty Pay (ISP), Board Certification Pay (BCP), and Chairman Pay (CP) were allocated to the medical officers by position and pay grade. Special pays are calculated using pay grade, position, and time of service. The references used to calculate the pays include; ISP - CNO Washington, message 041425Z OCT 87, NAVOP 119/89, BCP - SECNAVINST 7220.75B of 23 SEPT 83, pg. 5, MORB - SECNAV Washington, D. C. message 261738Z Jan 90, CP- PAYPERSMAN.
3. **Civilian pay:** Civilian pay was calculated by using the individual's actual hourly cost which was obtained from the NNMC Fiscal Office.

RESULTS

A. TQM Office salaries

1. The costs of salaries for the TQM Office is based on a TQM Coordinator and one assistant.

a. TQM Coordinator: For the size of the organization an 0-4 should be provided. Salary = \$75,548

b. An assistant at the paygrade of E-6 would be required in the office. Salary = \$37,085

c. Total direct salary cost = \$112,633

B. TQM staff training

1. A review of various training programs indicates the TQM Coordinator should receive approximately 3 weeks of training and the assistant at least 1 week.

a. An estimate of \$250.00 per week for a training program

b. 4 weeks of training x \$250.00/wk = \$1,000

C. Executive Steering Group (ESG) meetings

1. The ESG would be comprised of the Executive Council and TQM staff. It is estimated the ESG will meet approximately 50 times in the first year for meeting and training.

a. Hourly cost of the Executive Council was determined to be \$635.12

b. The hourly cost of the TQM office is estimated at \$54.15 (12,633/260 work days = \$434.20 per day/ 8 hours = \$54.15/hr).

c. Total hourly cost of the ESG (a + b) = \$689.27

d. Total salary cost for 50 hours of meetings = \$34,463.50

D. Contractor training for senior management

1. Basic TQM training for the members of the ESG will be required. A review of the courses from several management consulting firms indicates the average cost for training is

\$50.00 a day per person. Although the courses that are available vary in cost and length it is estimated the at least 5 days of training will be required by an outside consultant.

a. 13 members

x 250.00 (cost of 5 days x \$50.00)
\$3250.00

b. Associated salaries of ESG

\$689.27 (ESG hr. rate)
x 40 hrs.
\$27,570.80

c. Total estimated cost = \$30,820.40

E. Employee general TQM awareness training

1. A review of several organization indicates that many types of awareness training programs are being used. Generally it was considered that as a minimum, 8 hours are required to share the philosophies, principles, and basic tools of TQM. The training should be provided by the TQM Office and senior members of the command.

a. Civilian salaries for TQM awareness training:

\$15,727 (actual hourly cost for civilian salaries)
x 8 hours
\$125,816

b. Military salaries for awareness training are calculated on the staff size of 2068 members times the average costs is \$23.17 which was determined from the hourly rates of paygrades E3 to 06.

2068 members
x \$23.17/hour
\$47,915.56
x 8 hours of training
\$383,324.48

c. Total estimated salary cost of awareness training

Civilian = \$125,816.00
Military = \$383,324.48
\$509,140.48

F. Networking

1. No significant cost associated with networking with the many agencies and groups in the Bethesda area were identified that were not already identified could be identified.

G. Quality Management Board (QMB) meetings

1. QMB meetings would be required for each of the 10 Directorates for an estimated 1 hour every month beginning in the third month of implementation. A cost of the monthly meetings based on a recommended structure of Director and the Department Heads was evaluated. Hourly rate include special pays where appropriate.

a. Code 01 (hourly labor estimates)

Director - 0-6 = 50.57
Dept heads 0-6 = 50.57
GS-13 = 27.28
0-5 = 42.86
0-4 = 36.32
0-3 = 30.93
0-3 = 30.93
269.46/hr
x 10 mtgs
\$2694.60

b. Code 02 (hourly labor estimates)

Director - 0-6 = 62.27
Dept heads 0-6 = 498.16 (8 ea @ 62.27)
0-5 = 109.74 (2ea @ 54.87)
670.17/hr
x 10 mtgs
\$6701.70

c. Code 03 (hourly labor estimates)

Director - 0-6 = 62.27
Dept heads 0-6 = 684.97 (11 ea @ 62.27)
0-5 = 85.72 (2 ea @ 42.86)
832.96/hr
x 10 mtgs
\$8329.60

d. Code 04 (hourly labor estimates)

Director - 0-6 = 62.27
Dept heads 0-6 = 186.81 (3 ea @ 62.27)
0-5 = 85.72 (2 ea @ 42.86)
334.80
x 10 mtgs
\$3348.00

e. Code 05 (hourly labor estimates)

Director - 0-6 = 62.27
Dept heads 0-6 = 124.50 (2 ea @ 62.27)
186.81/hr
x 10 mtgs
\$1868.10

f. Code 06 (hourly labor estimates)

Director - 0-6 = 62.27
Dept heads 0-6 = 124.50 (2 ea @ 62.27)
0-4 = 108.96 (3 ea @ 36.32)
0-3 = 92.79 (3 ea @ 30.93)
388.52/hr
x 10 mtgs
\$3885.20

g. Code 07 (hourly labor estimates)

Director - 0-5 = 42.86
Dept heads 0-5 = 42.86
0-3 = 123.72 (4 ea @ 30.93)
GS-09 = 17.95
227.39/hr
x 10 mtgs
\$2273.90

h. Code 08 (hourly labor estimates)

Director - 0-6 = 50.57
Deputy Dir 0-5 = 42.86 Dept hds GS-13 = 54.56 (2 ea @ 27.28)
GS-11 = 43.38 (2 ea @ 21.69)
191.37/hr
x 10 mtgs
\$1913.70

i. Code 09 (hourly labor estimates)

Director - 0-5 = 42.86
Dept heads 0-5 = 42.86
0-4 = 72.64 (2 ea @ 36.32)
158.36/hr
x 10 mtgs
\$1583.60

j. Code 10 (hourly labor estimates)

Director - 0-6 = 50.57
Dept heads 0-6 = 101.14
151.71/hr
x 10 mtgs
\$1517.10

k. QMB Clerical support (1 hour per month)

\$16.32 hr
x 10 meetings/mo
\$163.20 per month
x 10 months
\$1632.00

H. Equipment and supplies

1. Several video tape are recommended for use in the various training session at all levels of the organization.

- a. The Deming Library - \$7,425
- b. Juran tapes - \$1,500
- c. Joel Barker videos - \$2,000

2. The Deming Management Method, by Mary Walton is recommended reading in many organization for senior management.

\$19.95 (current paperback price)
x 20
\$399.00

3. Estimated cost for duplication of training materials
= \$1000.00

4. Estimated cost of transparencies for use in presentations.

\$20.00	per box
x 10	boxes
<hr/>	
\$200.00	

5. Computer systems for TQM Office

\$3,000
x 2
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\$6,000

6. Total estimated equipment and supplies = \$18,524